Earth Observation Data Viewer (Ver. 2.4)

User's Manual

Japan Aerospace Exploration Agency (JAXA)

Revision history

Rev.	Date	Chapter	Descriptions
Version 1.0	2006.3.31	All	First Release
Version 1.1	2007.3.13	All	Add the new functions.
Version 2.0	2008.3.26	All	Add the new functions.
Version 2.1	2009.3.13	All	Add the new functions.
Version 2.2	2010.2.26	All	Add the new functions.
Version 2.3	2011.08.26	Title p4-70,71	Update of version information.
Version 2.4	2015.03.6	All	Add the new functions. [Add the functions] ・TRMM read data add. (section1.3) 　① PR 2H25(Spectral Latent Heating) 　② PR 3G25(Gridded Orbital Spectral Latent Heating) 　③ PR 3H25(Monthly Spectral Latent Heating) 　④ TM 3A21(Monthly TMI Pro ling) 　⑤ COMBO 2H31(Convective Stratiform Heating) 　⑥ COMBO 3G31(Gridded Orbital Convective 　　　　　　Stratiform Heating from Combined) 　⑦ COMBO 3H31(Monthly Convective 　　　　　　Stratiform Heating from Combined) ・TRMM read data delete.(section1.3) 　① PR 2H25R1(PR Surface Rain) 　② PR 2H25R2(PR Profile) ・GLI read data delete.(section1.3) 　① GLI1km/L1B(spacecraft position) 　② L2(Land)/PGCP [Modify the functions] 　・TRMM Ver7 data format support .(section1.3) 　・Change the Support OS (section1.4)

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1. Introduction

1.1. Purpose

The Earth Observation Data Viewer (EODV) is designed to work with the ADEOS-II/AMSR, ADEOS-II/GLI, Aqua/AMSR-E, TRMM/PR, TRMM/TMI, TRMM/VIRS and TRMM combined products delivered from the Japan Aerospace Exploration Agency (JAXA) and others. You can visualize its processed observing data and higher level physical products mapped on the earth with coast lines.

The functions of the EODV are shown in Table 1.1-1.

Table 1.1-1 EODV functions

Function	Description
Data display	Observation data and latitude longitude are read from each product of GLI/AMSR/AMSR-E, and data is displayed on a screen by the map projection according to each product. Drag & drop operation is available for specifying the file to display.
Zoom In/Zoom Out/Move	The arbitrary parts of the picture displayed on the map are expanded / reduced. Moreover, a picture is movable with mouse operation.
Data clip	The arbitrary areas specified with the mouse are outputted to a file in the form supported by the format conversion function to the picture displayed on the map.
Format conversion	The data of the domain where the product displayed on the map was specified is outputted to a file in the form of the following. ・Binary ・CSV ・KML(KMZ) ・Image (JPEG, TIFF, BMP, PNG) This function is able to copy a displayed image to clipboard.
Animation	Animation file(AVI format/ KML(KMZ) format) which are displayed the GLI/AMSR/AMSR-E and TRMM(PR/TMI/VIRS/combined) products on the earth map with coast lines is created.
Annotation information	The core meta information stored in the product is displayed. And the product information (channel, observation time range; only case of single channel) and the latitude and longitude information (and observation value) specified by mouse will be appeared at the bottom rail.
Help	By menu operation, the documents which indicated the operation method or FAQs of this tool are displayed on a browser. Moreover, the information relevant to earth observation data is displayed on a browser.

1.2. References

The format of each product of AMSR/AMSR-E/GLI is indicated by the following document. The following document is downloadable from the web site (http://www.eorc.jaxa.jp/en/index.html) .

(1) AMSR Level 1 product format description   (NEB-01040)
(2) AMSR Level 2 format description   (NDX-000154)
(3) AMSR Level 2 Map format description   (NDX-000152)
(4) AMSR Level 3 format description   (NDX-000155)
(5) AMSR Level 1 format description   (NEB-00011)
(6) AMSR Level 2 format description   (NDX-000272)
(7) AMSR Level 2 Map format description   (NDX-000273)
(8) AMSR-E Product Format AMSR Level 3 format description (NDX-000274)
(9) ADEOS-II GLI Level-1 Product Format Description   (NEB-01039)
(10) GLI Standard Higher Products File Specification   (Ver. 2.00)

About related information of TRMM, see the web site of JAXA/EORC - TRMM (http://www.eorc.jaxa.jp/TRMM/index_e.htm).

1.3. Object data

The specifications of mapping depend on the kind of product of AMSR/AMSR-E/GLI and TRMM (PR/TMI/VIRS/combined) product. Moreover, the kind of logging and convertible format is also decided. These relations are shown in Table 1.3-1.

Table 1.3-1 Correspondence between a product and a function (AMSR/AMSR-E)

Product Level		Data Type	Map projection (●＝Available(◎：Default))				Output file format					Animation Format		NOTE
			EQR	PS	Globe	MER	Binary (*1)	CSV (*1)	CSV (Latitude/ Longitude) (*2)	Image (*3)	KML/ KMZ(*4)	AVI	KML/ KMZ(*5)	
L1	L1A	Scene(Harf orbit)	◎	●	●	●	●	●	●	●	●	●	–	
	L1B	Scene(Harf orbit)	◎	●	●	●	●	●	●	●	●	●	–	
	L1B Map	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
L2	WV	Scene(Harf orbit)	◎	●	●	●	●	●	●	●	●	●	–	
	CLW	Scene(Harf orbit)	◎	●	●	●	●	●	●	●	●	●	–	
	AP	Scene(Harf orbit)	◎	●	●	●	●	●	●	●	●	●	–	
	SSW	Scene(Harf orbit)	◎	●	●	●	●	●	●	●	●	●	–	
	SST	Scene(Harf orbit)	◎	●	●	●	●	●	●	●	●	●	–	
	SWE	Scene(Harf orbit)	◎	●	●	●	●	●	●	●	●	●	–	
	IC	Scene(Harf orbit)	◎	●	●	●	●	●	●	●	●	●	–	
	SM	Scene(Harf orbit)	◎	●	●	●	●	●	●	●	●	●	–	
L2 Map	WV	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	CLW	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	AP	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SSW	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SST	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SWE	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	IC	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SM	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
L3	TB	Global(EQR)	◎	–	–	–	●(*6)	●(*6)	–	●	●	●	●	
		Northern Hemisphere(P	–	◎	–	–	●(*6)	●(*6)	–	●	–	●	–	
		Southern Hemisphere(P	–	◎	–	–	●(*6)	●(*6)	–	●	–	●	–	
	WV	Global(EQR)	◎	–	–	–	●(*6)	●(*6)	–	●	●	●	●	
	CLW	Global(EQR)	◎	–	–	–	●(*6)	●(*6)	–	●	●	●	●	
	AP	Global(EQR)	◎	–	–	–	●(*6)	●(*6)	–	●	●	●	●	
	SSW	Global(EQR)	◎	–	–	–	●(*6)	●(*6)	–	●	●	●	●	
	SST	Global(EQR)	◎	–	–	–	●(*6)	●(*6)	–	●	●	●	●	
	SWE	Global(EQR)	◎	–	–	–	●(*6)	●(*6)	–	●	●	●	●	
		Northern Hemisphere(P	–	◎	–	–	●(*6)	●(*6)	–	●	–	●	–	
	IC	Northern Hemisphere(P	–	◎	–	–	●(*6)	●(*6)	–	●	–	●	–	
		Southern Hemisphere(P	–	◎	–	–	●(*6)	●(*6)	–	●	–	●	–	
	SM	Global(EQR)	◎	–	–	–	●(*6)	●(*6)	–	●	●	●	●	

(*1) When you wants to output data to binary or csv file,you should select "Mesh mode" in the "resolution" menu.
(*2) The portion specified at the time of the displayed by EQR/MER is outputted.
(*3) JPEG、TIFF、BMP、PNG
(*4) When the data displayed EQR projection, it is possible to output KML/KMZ file
(*5) When the data displayed EQR projection, it is possible to output Time lined KML/KMZ file
(*6) Earth Observation Data Viewer can not output specified area int this product file.

Table 1.3-1 Correspondence between a product and a function (GLI (1/2))

Product Level	Product Code	Data Type	EQR	PS	Globe	MER	Binary (*1)	CSV (*1)	CSV (Latitude/ Longitude) (*2)	Image (*3)	KML/ KMZ(*4)	AVI	KML/ KMZ(*5)	NOTE
			\multicolumn{4}{c}{Map projection (●=Available(◎:Default))}				\multicolumn{5}{c}{Output file format}		\multicolumn{2}{c}{Animation Format}		
L1	L1A(VNIR)	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	L1A (SWIR)	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	L1A (MTIR)	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	L1B(VNIR)	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	L1B(SWIR)	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	L1B(MTIR)	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	L1B Map (VNIR)	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	L1B Map(SWIR)	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	L1B Map(MTIR)	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	L1A	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	L1B	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	L1B Map	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
L2A	L2A_OA	Path	◎	●	●	●	●	●	●	●	●	●	–	
	L2A_LC	Area(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	L2A_LC	Area(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
L2 (Atmosphere)	ARAE	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	AROP	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLFLG_p	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	CLFR	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLOP_p	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	PRCPW_p	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	CLER_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLER_i_e	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLOP_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLOP_i_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLOP_i_e	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLTT_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLTT_i_e	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLHT_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLWP_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
L2 (Sea)	NL_FR	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	NL_LR	Path	◎	●	●	●	●	●	●	●	●	●	–	
	CS_FR	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	CS_LR	Path	◎	●	●	●	●	●	●	●	●	●	–	
	ST_FR	Scene	◎	●	●	●	●	●	●	●	●	●	–	
	ST_LR	Path	◎	●	●	●	●	●	●	●	●	●	–	
L2 (Land)	VGI	Zone(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	VGI	Zone(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	ACLC	Area(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	ACLC	Area(PS)	◎	●	●	●	●	●	●	●	●	●	–	
L2 (Snow/Ice)	SNGI	Zone(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	SNGI	Zone(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNGI_p	Scene	◎	●	●	●	●	●	●	●	●	●	–	
L2Map (Atmosphere)	CLFLG_p	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	CLOP_p	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	PRCPW_p	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
L2Map (Sea)	NW	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	LA	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	CHLA	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SS	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	CDOM	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	K490	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	ST	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	

(＊1) When you wants to output data to binary or csv file,you should select ″Mesh mode″ in the ″resolution″ menu.
(＊2) The portion specified at the time of the displayed by EQR/MER is outputted.
(＊3) JPEG、TIFF、BMP、PNG
(＊4) When the data displayed EQR projection, it is possible to output KML/KMZ file
(＊5) When the data displayed EQR projection, it is possible to output Time lined KML/KMZ file
(＊6) Earth Observation Data Viewer can not output specified area int this product file.

Table 1.3-1 Correspondence between a product and a function (GLI (2/2))

Product Level	Product Code	Data Type	Map projection (●=Available(◎:Default)) EQR	PS	Globe	MER	Output file format Binary (*1)	CSV (*1)	CSV (Latitude/Longitude) (*2)	Image (*3)	KML/KMZ(*4)	Animation Format AVI	KML/KMZ(*5)	NOTE
L2Map (Sea)	QF_OC	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	QF_ST	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
L2Map (Snow/Ice)	SNGI_p	Scene(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(MER)	◎	●	●	●	●	●	●	●	●	●	–	
		Scene(PS)	◎	●	●	●	●	●	●	●	●	●	–	
L3Binned (Atmosphere)	ARAE	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	AROP	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLFR	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLER_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLER_i_e	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLOP_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLOP_i_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLOP_i_e	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLTT_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLTT_i_e	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLWP_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLHT_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
L3Binned (Sea)	NW	Global	◎	●	●	●	●	●	●	●	●	●	–	
	LA	Global	◎	●	●	●	●	●	●	●	●	●	–	
	CS	Global	◎	●	●	●	●	●	●	●	●	●	–	
	ST	Global	◎	●	●	●	●	●	●	●	●	●	–	
L3Binned (Snow/Ice)	SNWG	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWG	Northern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWG	Southern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNGI	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	SNGI	Northern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNGI	Southern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWGS	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWGS	Northern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWGS	Southern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWTS	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWTS	Northern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWTS	Southern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
L3 STA Map (Atmosphere)	ARAE	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	AROP	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLFR	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLER_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLER_i_e	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLOP_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLOP_i_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLOP_i_e	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLTT_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLTT_i_e	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLWP_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CLHT_w_r	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
L3 STA Map (Sea)	NW	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	LA	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CHLA	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	SS	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	CDOM	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	K490	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	ST_DayNight	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	ST_all	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
L3 STA Map (Land)	VGI	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
L3 STA Map (Snow/Ice)	SNWG	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWG	Northern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWG	Southern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWI	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWI	Northern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWI	Southern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWGS	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWGS	Northern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWGS	Southern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWTS	Global(EQR)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWTS	Northern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	
	SNWTS	Southern Hemisphere(PS)	◎	●	●	●	●	●	●	●	●	●	–	

(*1) When you wants to output data to binary or csv file,you should select "Mesh mode" in the "resolution" menu.
(*2) The portion specified at the time of the displayed by EQR/MER is outputted.
(*3) JPEG、TIFF、BMP、PNG
(*4) When the data displayed EQR projection, it is possible to output KML/KMZ file
(*5) When the data displayed EQR projection, it is possible to output Time lined KML/KMZ file
(*6) Earth Observation Data Viewer can not output specified area int this product file.

Table 1.3-1 Correspondence between a product and a function (TRMM)

Sensor	Product Code	Product	Data Type	Map projection (●=Available(◎:Default))				Output file format					Animation Format		NOTE
				EQR	PS	Globe	MER	Binary (*1)	CSV (*1)	CSV (Latitude/Longitude) (*2)	Image (*3)	KML/KMZ(*4)	AVI	KML/KMZ(*5)	
PR	1B21	PR Power	Swath	◎	●	●	●	●	●	●	●	●	●	–	
	1C21	PR Reflectivities	Swath	◎	●	●	●	●	●	●	●	●	●	–	
	2A21	PR Surface Cross Section	Swath	◎	●	●	●	●	●	●	●	●	●	–	
	2A23	PR Qualitative	Swath	◎	●	●	●	●	●	●	●	●	●	–	
	2A25	PR Profile	Swath	◎	●	●	●	●	●	●	●	●	●	–	
	3A25	PR Rainfall	Planetary Grid	◎	–	–	●	●(*6)	●(*6)	–	●	●	●	–	
	3A26	PR Surface Rain	Planetary Grid	◎	–	–	●	●(*6)	●(*6)	–	●	●	●	–	
	2H25	PR Spectral Latent Heating	Swath	◎	●	●	●	●	●	●	●	●	●	–	
	3G25	PR Gridded Orbital Spectral Latent Heating	Swath	◎	●	●	●	●	●	●	●	●	●	–	
	3H25	PR Monthly Spectral Latent Heating	Planetary Grid	◎	–	–	●	●(*6)	●(*6)	–	●	●	●	–	
TMI	1B11	TMI Brightness Temperatures	Swath	◎	●	●	●	●	●	●	●	●	●	–	
	2A12	TMI Profiling	Swath	◎	●	●	●	●	●	●	●	●	●	–	
	3A11	TMI Emission	Planetary Grid	◎	–	–	●	●(*6)	●(*6)	–	●	●	●	–	
	3A12	TMI Monthly TMI Proling	Planetary Grid	◎	–	–	●	●(*6)	●(*6)	–	●	●	●	–	
VIRS	1B01	VIRS Radiance	Swath	◎	●	●	●	●	●	●	●	●	●	–	
TRMM Combined	2B31	TRMM combined	Swath	◎	●	●	●	●	●	●	●	●	●	–	
	3B31	Rainfall combined	Planetary Grid	◎	–	–	●	●(*6)	●(*6)	–	●	●	●	–	
	3B42	TRMM and Others GPI Calibration	Planetary Grid	◎	–	–	●	●(*6)	●(*6)	–	●	●	●	–	
	3B43	TRMM and Others Data sources	Planetary Grid	◎	–	–	●	●(*6)	●(*6)	–	●	●	●	–	
	2H31	Convective Stratiform Heating	Swath	◎	●	●	●	●	●	●	●	●	●	–	
	3G31	Gridded Orbital Convective Stratiform Heating from Combined	Swath	◎	●	●	●	●	●	●	●	●	●	–	
	3H31	Monthly Convective Stratiform Heating from Combined	Planetary Grid	◎	–	–	●	●(*6)	●(*6)	–	●	●	●	–	

(*1) When you wants to output data to binary or csv file,you should select "Mesh mode" in the "resolution" menu.

(*2) The portion specified at the time of the displayed by EQR/MER is outputted.

(*3) JPEG、TIFF、BMP、PNG

(*4) When the data displayed EQR projection, it is possible to output KML/KMZ file

(*5) When the data displayed EQR projection, it is possible to output Time lined KML/KMZ file

(*6) Earth Observation Data Viewer can not output specified area int this product file.

(*7) TRMM data version 7 only.

1.4. Environment

The required environment for the Earth Observation Data Viewer is shown in the Table 1.4-1. The required disk space for saving Earth observation data is not included.

Table 1.4-1 Environment

Items	Conditions
Processor	PentiumIVCPU or more
Operating System	Windows7 or Windows 8.1
RAM	2GB or more
Hard Disk Space	1GB or more
Display Unit	1024 pixels by 768 lines, High Color (24 bits mode) or more
Others	Mouse or Pointing device PDF Viewer and Web Browser

The Earth Observation Data Viewer reads various informations (observation data, latitude longitude value, etc.) from HDF file, and stores it in the memory of PC. For displaying the data of big size, please install this tool in PC which carried sufficient memory. If not, this tool has very slow response. The memory usage of this tool is shown in Fig. 1.4-1.
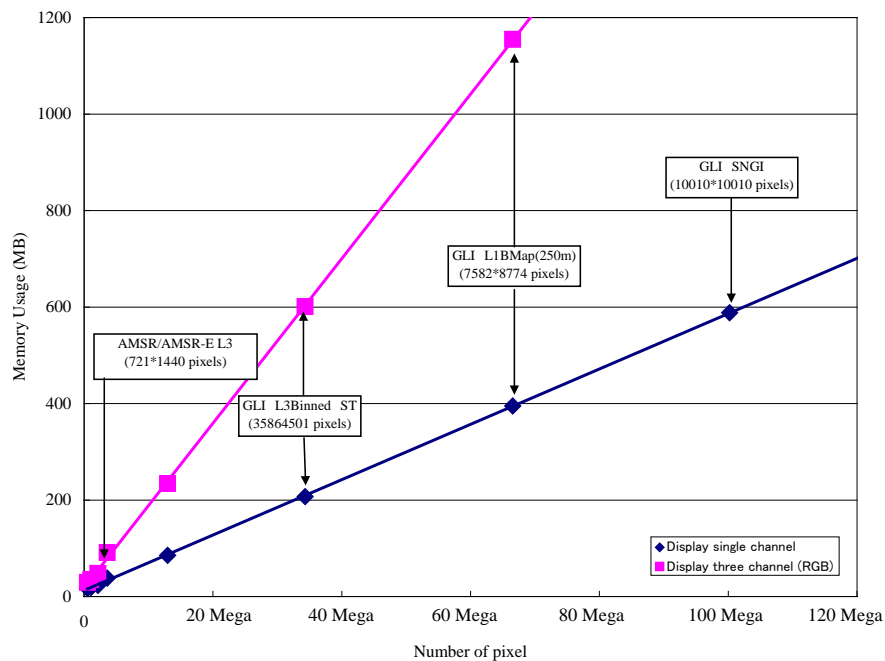
Figure 2.1-1 Memory usage of the Earth Observation Data Viewer.

2. Configuration

　　After the installation of the Earth Observation Data Viewer, it is necessary to perform configuration.
The parameter (EarthObservationDataViewer.ini) file in the installation folder is set up using the Note pad of
Windows system. Two kinds of information shown below are stored in the parameter file.

　　(1) Folder definition Information
　　　　The folder which this tool refers to is defined.
　　(2) User definition Information
　　　　Information (Data Display /Save as Binary /Save as CSV) peculiar to a user is defined. This
　　　　information can be set up using a **[Preferences Dialog].** Please refer to **[4.2.3 Preferences]** about the
　　　　operation of a **[Preferences Dialog].**

This information can be set up using a **[Preferences Dialog].** Please refer to **[4.2.3 Preferences]** about the
operation of a **[Preferences Dialog].**

　　The example of an installation folder is shown in Fig. 2.1-1, and the example of a setting of a parameter
file is shown in Fig. 2.1-2.
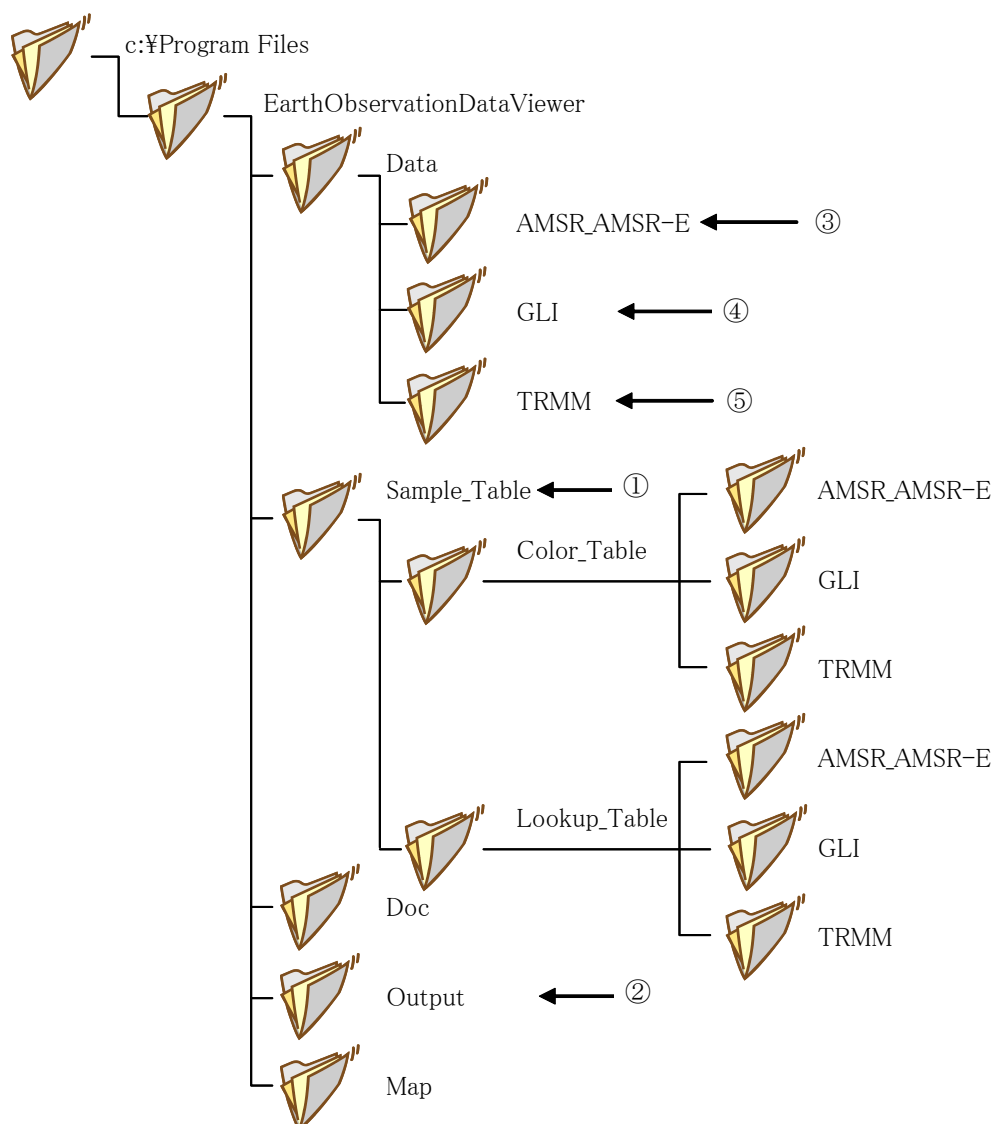
Figure 2.1-1 the directory structure of the default installation

```
[DIR]
DEF_FILE=C:¥Program File¥EarthObservationDataViewer¥Sample_Table          ←  ①
INPUT_DIR=C:¥Program File¥EarthObservationDataViewer¥Data¥AMSR_AMSR-E      ⎫
INPUT_DIR_MOVIE=C:¥Program File¥EarthObservationDataViewer¥Data¥AMSR_AMSR-E ⎬ ③
INPUT_DIR_GLI= C:¥Program File¥EarthObservationDataViewer¥Data¥GLI         ⎫ ④
INPUT_DIR_MOVIE_GLI= C:¥Program File¥EarthObservationDataViewer¥Data¥GLI   ⎭
INPUT_DIR_TRMM= C:¥Program File¥EarthObservationDataViewer¥Data¥TRMM       ⎫ ⑤
INPUT_DIR_MOVIE_TRMM= C:¥Program File¥EarthObservationDataViewer¥Data¥TRMM ⎭
OUTPUT_DIR= C:¥Program File¥EarthObservationDataViewer¥Output              ⎫
OUTPUT_DIR_MOVIE= C:¥Program File¥EarthObservationDataViewer¥Output        ⎬ ②
OUTPUT_DIR_MOVIE_GLI= C:¥Program File¥EarthObservationDataViewer¥Output    ⎪
OUTPUT_DIR_MOVIE_TRMM= C:¥Program File¥EarthObservationDataViewer¥Output   ⎭

[MAP]
MAP_FILE= C:¥Program File¥EarthObservationDataViewer¥Map¥gshhs_l.b    ←  Map data

[GENERIC]
MAX_FILE=14          ←          Number of read file
ENDIAN=0           ←          Byte order for binary file
INV_DATA_VAL=-9999      ←          Non-Observation data value
N_COL=2            ←          Number of the points
N_FRAC=3            ←          Decimal place of output data
INTERVAL=1           ←          GLI Sampling Interval
INTERVAL_TRMM=1        ←          TRMM Sampling Interval
```

Folder definition Information

User definition information

Figure 2.1-2 example of the setting of the parameter file

3. Window Composition

Earth Observation Data Viewer consists of some window. Window compositions are shown in the Fig. 3-1. Window details are shown in the Table 3-1.
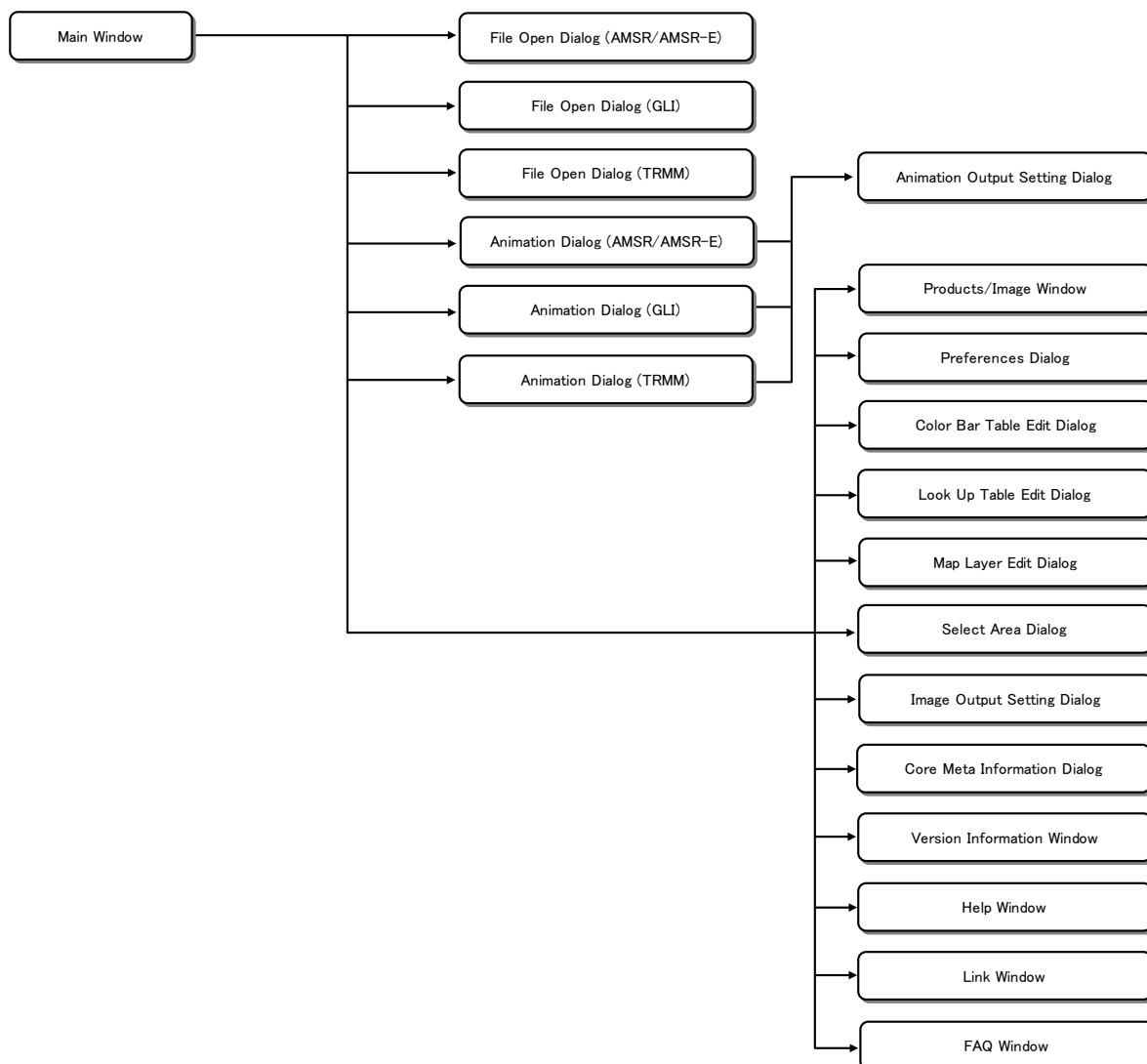
Figure 3-1 Window Composition

Table 3-1 Window detail

No.	Window	Conditions
1.	Main Window	Main window of Earth Observation Data Viewer. With a menu and tool bar, perform ZoomIn/ZoomOut of an image.
2.	File Open Dialog (AMSR/AMSR-E)	This dialog is specified the AMSR/AMSR-E product to open.
3.	File Open Dialog (GLI)	This dialog is specified the GLI product to open.
4.	File Open Dialog (TRMM)	This dialog is specified the TRMM product to open.
5.	Animation Dialog(AMSR/AMSR-E)	This dialog is specified the AMSR/AMSR-E product used for the animation creating.
6.	Animation Dialog (GLI)	This dialog is specified the GLI product used for the animation creating.
7.	Animation Dialog (TRMM)	This dialog is specified the TRMM product used for the animation creating.
8.	Animation Output Setting Dialog	This dialog sets up the layout of making an animation file.
9.	Display map & products Window	This window displays the image of the inputted product.
10.	Preferences Dialog	This dialog sets up initial information.
11.	Color Bar Table Edit Dialog	This dialog sets up a color bar table.
12.	Look Up Table Edit Dialog	This dialog sets up a look up table.
13.	Map layer Edit Dialog	This dialog sets indication color of coastline and latitude longitude lines.
14.	Select Area Dialog	This dialog inputs the latitude longitude of the upper left and the lower right, and specifies a domain.
15.	Image Output Setting Dialog	This dialog sets up the layout of saving a picture.
16.	Core Meta Information Dialog	This dialog displays the core meta data of the picture.
17.	Version Information Window	This window displays the version information of Earth Observation Data Viewer.
18.	Help Window	Operation explanation of Earth Observation Data Viewer is displayed on a browser.
19.	Link Window	The related link information of Earth Observation Data Viewer is displayed on a browser.
20.	FAQ Window	Frequently Asked Questions of Earth Observation Data Viewer is displayed on a browser.

4. Using Earth Observation Data Viewer

The operation flow of the Earth Observation Data Viewer is shown in Fig. 4-1. The number in a figure shows the chapter number explaining operation. Refer to each chapter for the details of operation.

```
        START                                    Select file(s)

   Open the file(s).                     Drag the specified file(s) and
      (4.1.1)                            drop onto the short cut icon.
                                                  (4.1.1)

   Select color palette.
      (4.3.1)

   Change the map layout
         (4.2)

Save value only      Data Saved      Other preservation methods

Specify a map projection    Save value with Lat/Lon
of other than a             Save as Binary
Poral stereo.(4.2.5)
                        Zoom in/out the area           Data Saved      Save as KML/KMZ
Specify a preservation    to save. (4.2.4)
area by a mouse or
[Selection Area Dialog]                         Save as Image
(4.2.11/4.2.12)         Specify resolution other   Specify the output      Save as KML/KMZ
                        than original. (4.2.6)     method of an image.      format. (4.1.3)
Specify the output method                              (4.3.3)
to a CSV file. (4.2.3)  Perform interpolation.
                             (4.2.7)              Specify a map layer.
                                                     (4.3.4)
Save as CSV file. (4.1.5)  Specify a preservation                          KML/KMZ
                        area by a mouse or        Save as Image file.
                        [Selection Area Dialog]       (4.1.2)
        CSV file        (4.2.11/4.2.12)

                        Save as CSV format or        Image file
                        Binary format. (4.1.4/4.1.5)

                             CSV file/
                             Binary file
```

Figure 4-1 Operation flow

4.1. File Menu

There are eight sub menus in a file menu.
(1) Open
(2) Animation
(3) Save as Image
(4) Save as KML(KMZ)
(5) Save as Binary
(6) Save as CSV
(7) Copy to Clipboard
(8) Quit

File menus are shown in Fig. 4.1-1, and each menu is explained henceforth.
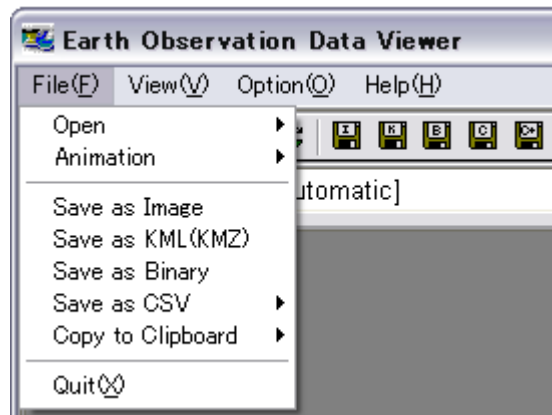
Figure 4.1-1 File Menu Pull Down

4.1.1. Open/Animation

On this tool, there are two methods of selecting the product file to display, as follows:
(1) Using File Open Dialog/Animation Dialog.
(2) Dragging product file(s) and dropping onto the shortcut icon.

The outline is explained as follows.

[Using File Open Dialog/Animation Dialog.]

There are three sub menus in a file open menu.

(1) Open AMSR/AMSR-E Products
(2) Open GLI Products
(3) Open TRMM Products

Moreover, there are three sub menus in an animation menu.

(1) AMSR/AMSR-E Product
(2) GLI Product
(3) TRMM Product

Sub menus of [Open] menu are shown in Fig. 4.1.1-1, and sub menus of [Animation] are shown in Fig. 4.1.1-2. The product file to display is selected by using [File Open] or [Make Animation] dialog that displayed to select these sub menus. Each sub menus are explained henceforce.
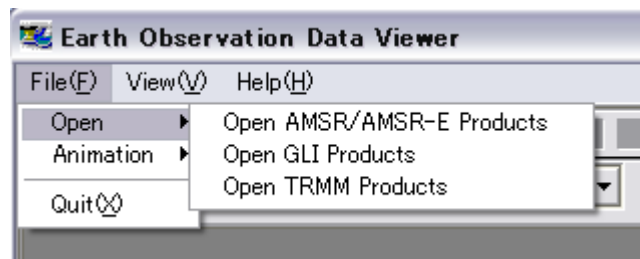
Figure 4.1.1-1 [Open] sub menu
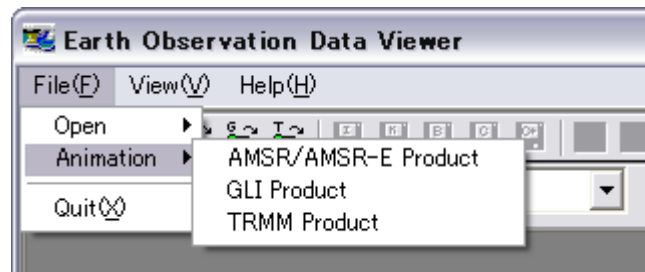
Figure 4.1.1-2 [Animation] sub menu

[Dragging product file(s) and dropping onto the shortcut icon.]

It is possible to specify the product file(s) to be drawn by dragging it and dropping onto the shortcut icon of this tool (Fig. 4.1.1-3). After installing this tool, the shortcut icon is appeared on the desktop. This function is available for displaying.
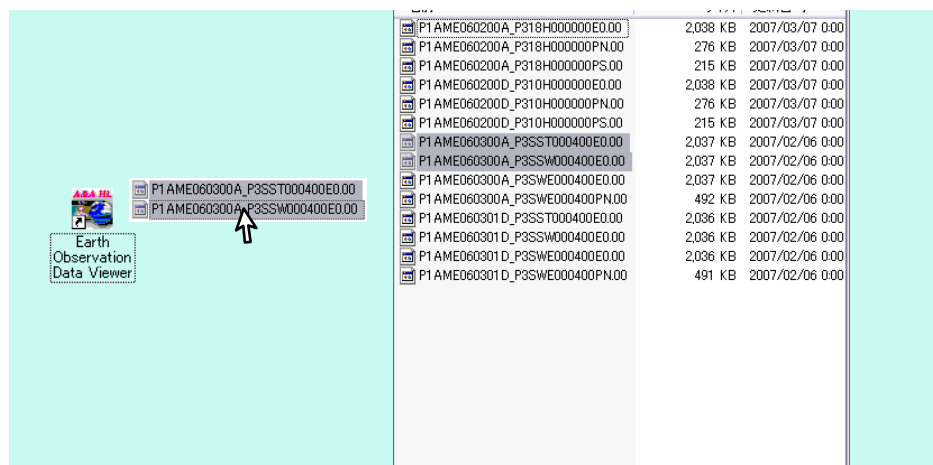
Figure 4.1.1-3 Drag & drop

After this operation, [Display map & products Window] and [File Open dialog] according to the specified file will appear (Fig.4.1.1-4).
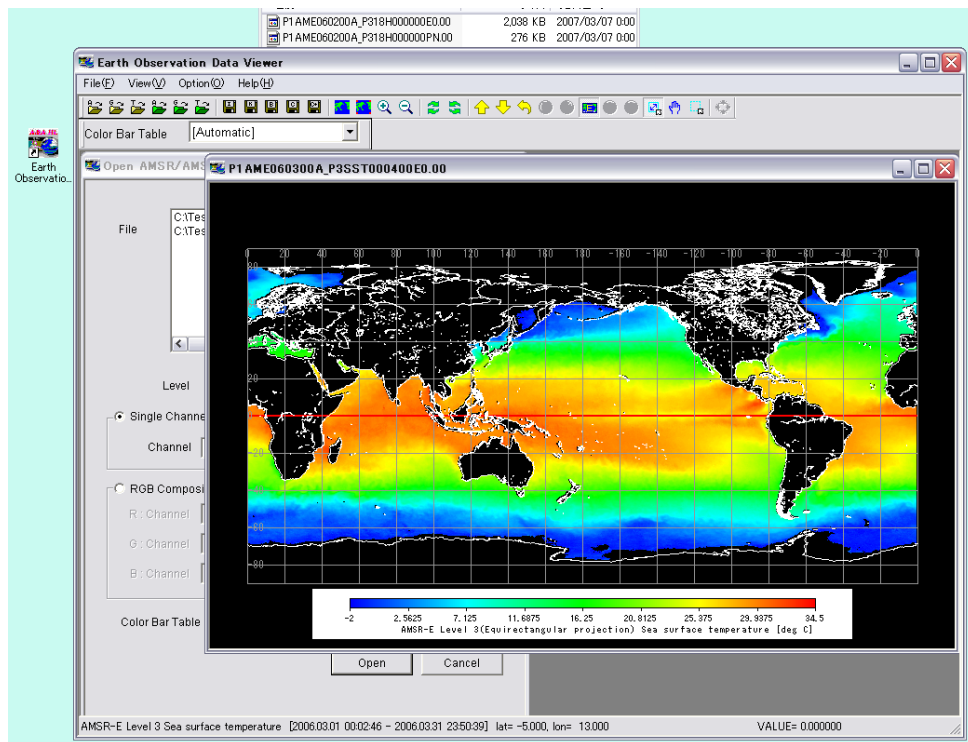
Figure 4.1.1-4 An Example of image display by drag & drop operation to short cut icon

When you specify files of the same product levels at the same time, all specified files aren't displayed in the following cases.

- If you specify files of Level3. → Only one file of specified files are displayed.
- If number of the files specified exceeds maximum number. → [File Open Dialog] will be only displayed.

When you drag and drop multiple product levels at the same time, displaying follows the following priority rules.

If you specify multiple sensors, displaying priority is AMSR/AMSR-E, TRMM, GLI.
If you specify multiple levels, the files of lower level are preferentially displayed.

4.1.1.1. Open AMSR/AMSR-E Products

When the **[Open AMSR/AMSR-E Products]** sub menu is chosen, **[File Open Dialog (AMSR/AMSR-E)]** is displayed, and an AMSR and/or AMSR-E product can be read. How to read a AMSR/AMSR-E product is explained. **[File Open Dialog (AMSR/AMSR-E)]** layout is shown in Fig. 4.1.1-2.
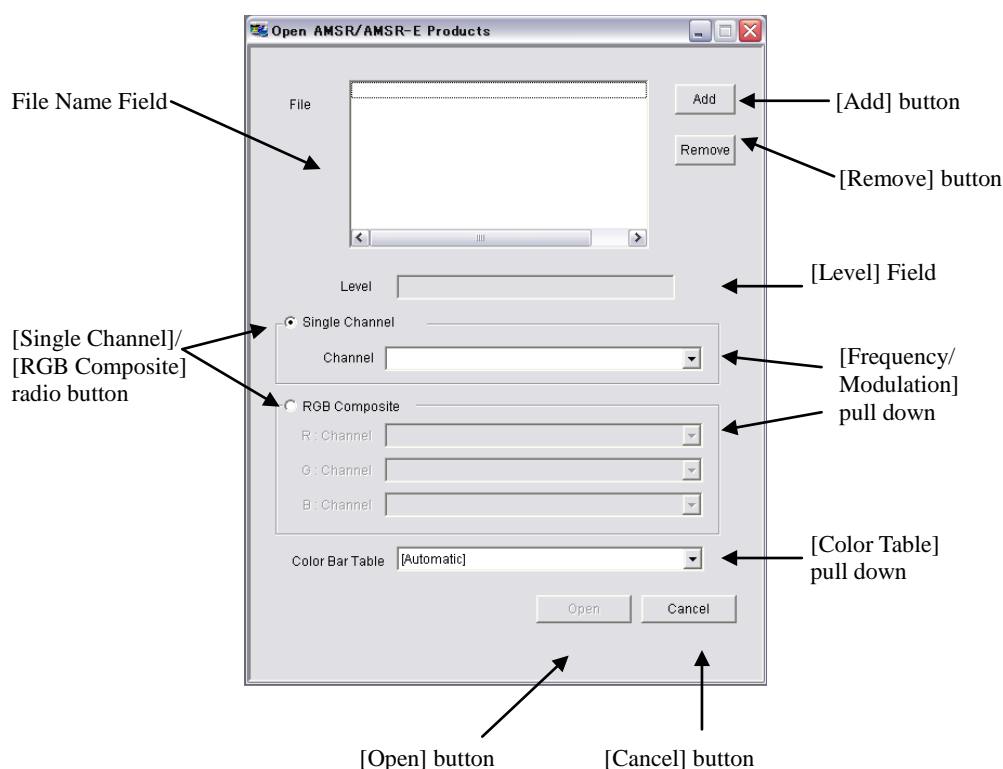
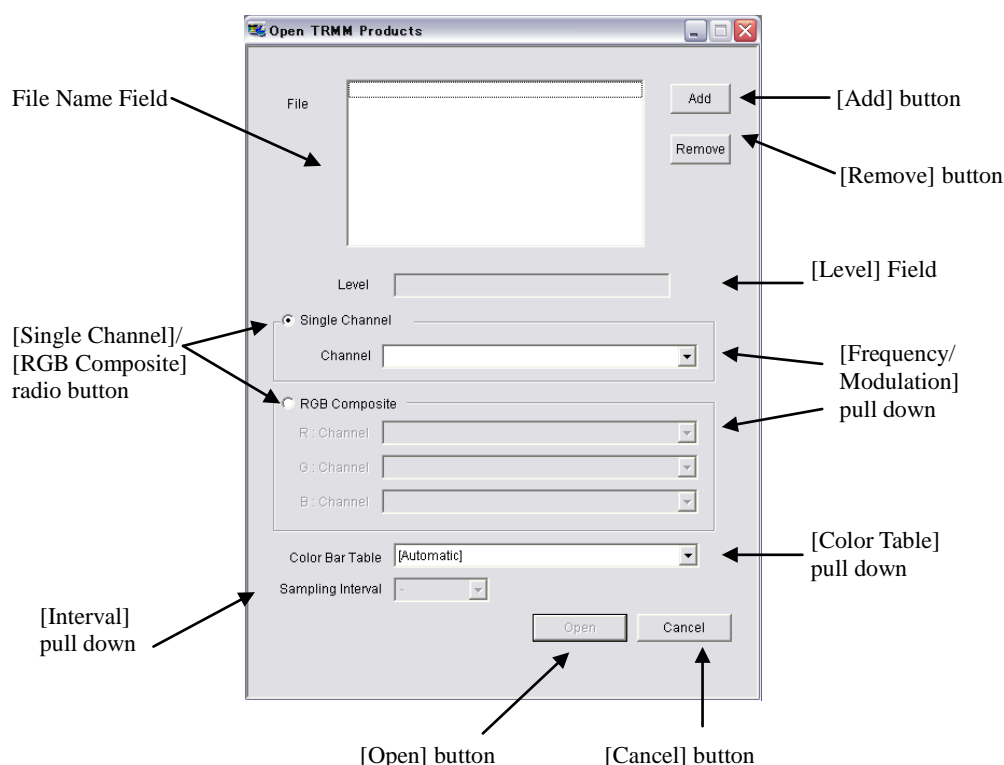Figure 4.1.1.1-1 File Open Dialog (AMSR/AMSR-E)

■ File Name Field

In this field, the specified file name of AMSR/AMSR-E product is displayed. It is possible to specify files by using [Add] button or drag & drop operation (Fig. 4.1.1.1-2).
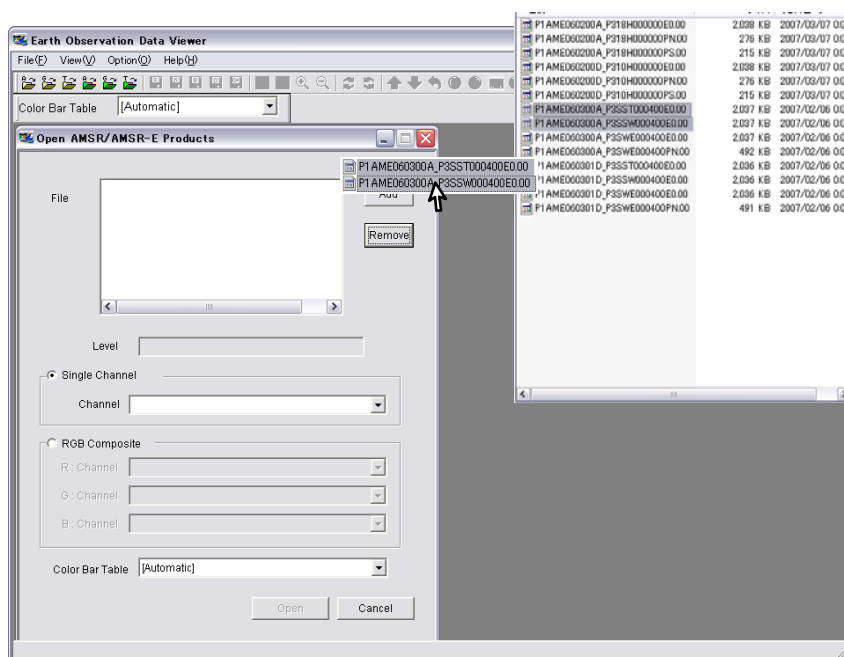
Figure 4.1.1.1-2 Drag & drop operation

You must select same product level of files. (Case of Level 3, you must also select same projection.) The product level will be displayed on [**Level**] field.
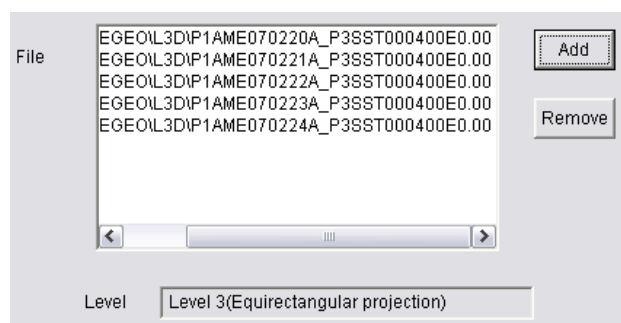
Figure 4.1.1.1-3 Result of addition to File Name Field

Configurations specify the number of the maximum files in this list.

■ **[Add]** button
Please click this **[Add]** button to specify the files to be opened, then **[Open]** dialog provided by Windows system will be popped up. You can select plural files with mouse and pressing **[Ctrl]** key on **[Open]** dialog provided by Windows system.

■ **[Remove]** button
If you highlight file name on the selected files list in **[Open AMSR/AMSR-E Products]** dialog and click this **[Remove]** button, the highlighted file is removed from the list.

■ **[Single Channel] / [RGB Composite]** radio button
You can select either Single Channel mode or RGB Composite Image mode as the image processing way.
*) When you input Level 2/ Level 2 Map product, you cannot select Channel.
*) When you input Level 3 product, you select a file instead of channel on the pull down list.

In the state of the **[Single Channel] / [RGB Composite]** radio button, change the title of a **[Color Bar Table]**.

[Single Channel]
The **[Color Table]** title displays as a **[Color Bar Table]**.
You shall select one of Color Bar Table from this **[Color Bar Table]** pull down list for the Single Channel mode.
All files of extension "clt" stored in "AMSR_AMSR-E" folder in the color table folder are shown in this pull down list. You can select "[Automatic]" function that automatically adjusts the maximum/minimum value and color palettes.
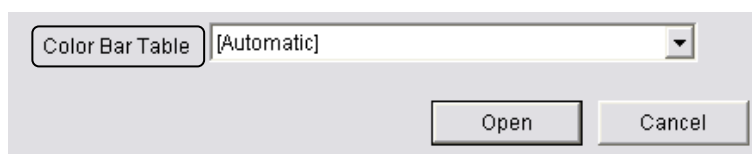
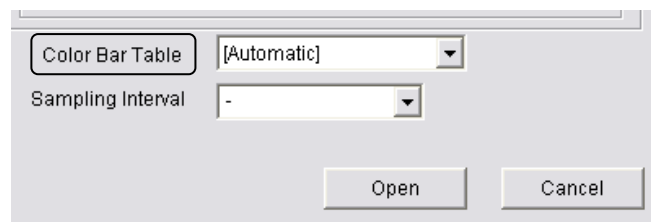

Figure 4.1.1.1-4 [Color Bar Table] pull down

[RGB Composite]
The **[Color Table]** title displays as a **[Look Up Table]**.
You shall select one of Look Up Table from this **[Look Up Table]** pull down list for the RGB Composite Image mode.

All files of extension "lut" stored in "AMSR_AMSR-E" folder in look-up table folder are shown in this pull down list. You can select 〝[Automatic]〟 function that automatically makes the relation between the maximum/minimum count value of each RGB channel and the observation value be corresponding.
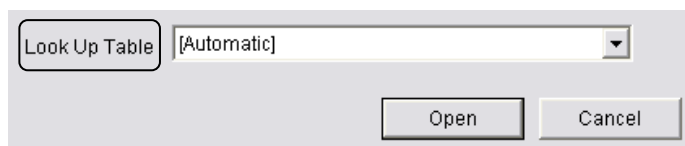
Figure 4.1.1.1-5 [Look UpTable] pull down

■ **[Frequency / Modulation]** pull down
    You can select a channel from this **【Frequency / Modulation】** pull down list.

■ **[Open]** button
    If you click this **[Open]** button, Earth Observation Data Viewer starts to read the listed files in **[Open AMSR/AMSR-E Products]** dialog. An Equidistant mapped image will be displayed on the new window[Fig. 4.1.1.1-6].
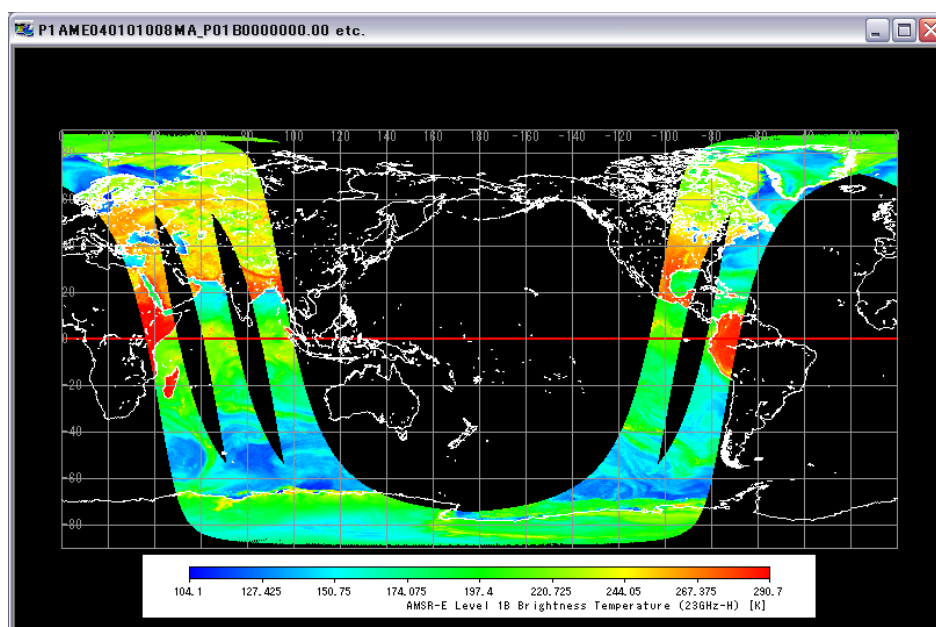
Figure 4.1.1.1-6 Image Window

■ **[Cancel]** button
    All setting shown in the dialog is canceled and the dialog is closed.

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4.1.1.2. Open GLI Products

If the **[Open GLI Products]** sub menu is chosen, **[File Open Dialog (GLI)]** is displayed, and a GLI product can be read. How to read a GLI product is explained. **[File Open Dialog (GLI)]** layout is shown in Fig. 4.1.1-7.
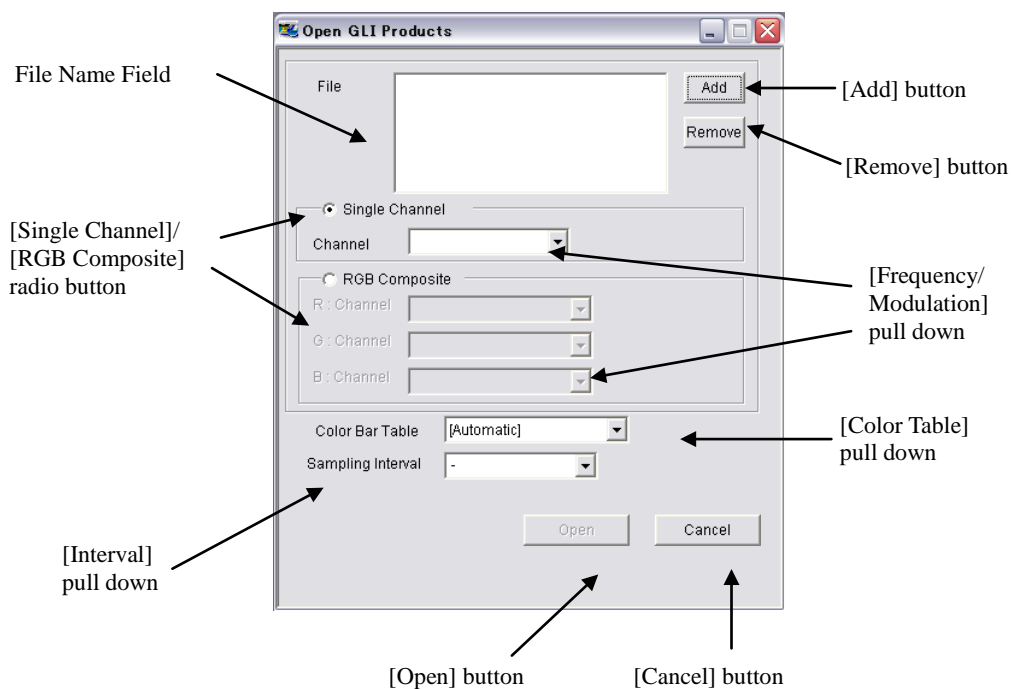
Figure 4.1.1.2-1 File Open Dialog (GLI)

■ File Name Field

In this field, the specified file name of GLI product is displayed. It is possible to specify files by using [Add] button or drag & drop operation (Please refer to 4.1.1.1).
Please specify only the GLI product for this field.
Configurations specify the number of the maximum files in this list.
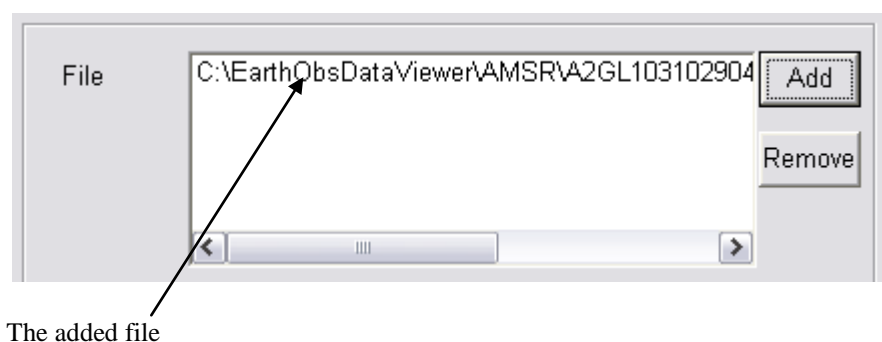
Figure 4.1.1.2-1 Result of addition to File Name Field

■ **[Add]** button

Please click this **[Add]** button to specify the files to be opened, then **[Open]** dialog provided by Windows system will be popped up. You can select plural files with mouse and pressing **[Ctrl]** key on **[Open]** dialog provided by Windows system. **[File Select]** dialog layout is shown in Fig. 4.1.1.2-3.

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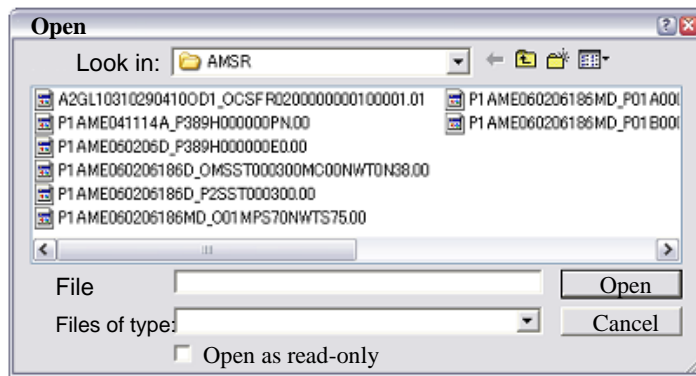
Figure 4.1.1.2-3 File Select Dialog

■ **[Remove]** button
  Highlight file name and click this **[Remove]** button, the highlighted file will be removed.

■ **[Single Channel] / [RGB Composite]** radio button
  You can select either Single Channel mode or RGB Composite Image mode as the image processing way. In the state of the **[Single Channel]/[RGB Composite]** radio button, change the title of a **[Color Bar Table]**.

[Single Channel]
  The **[Color Table]** title displays as a **[Color Bar Table]**.
  You shall select one of Color Bar Table from this **[Color Bar Table]** pull down list for the Single Channel mode.
  All files of extension "clt" stored in "GLI" folder in the color table folder are shown in this pull down list. You can select "[Automatic]" function that automatically adjusts the maximum/minimum value and color palettes.
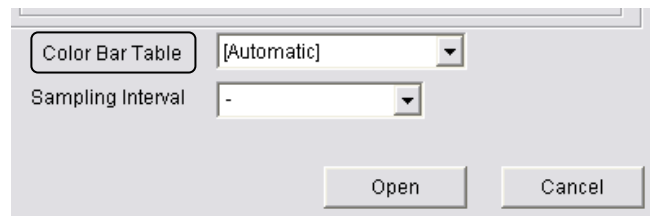
Figure 4.1.1-10 [Color Bar Table] pull down

[RGB Composite]
  The **[Color Table]** title displays as a **[Look Up Table]**.
  You shall select one of Look Up Table from this **[Look Up Table]** pull down list for the RGB Composite Image mode.
  All files of extension "lut" stored in "GLI" folder in look-up table folder are shown in this pull down list. You can select "[Automatic]" function that automatically makes the relation between the maximum/minimum count value of each RGB channel and the product value be corresponding.
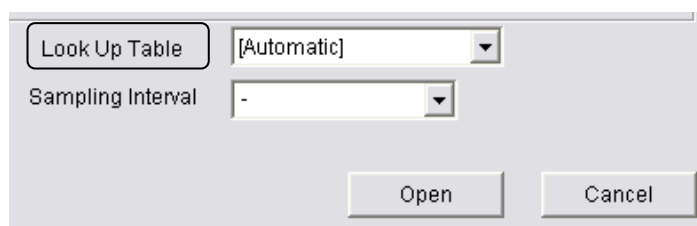
Figure 4.1.1-11 [Look UpTable] pull down

■ **[Frequency / Modulation]** pull down
You can select a channel from this 【Frequency / Modulation】 pull down list.

■ **[Interval]** pull down
You can set the sampling interval for the GLI products from the pull down list. You can select the sampling interval from this pull down menu, also you can set the value from 1 to 99.

If you select the small value in the sampling interval, this software has slow response depend on the HDF library. Please refer the following table.

Table 4.1-1 result by the sampling itnerval

	Sampling interval & Display time										
sampling interval	-	2	3	4	5	6	7	8	9	10	15
time (sec)	39	124	55	30	22	14	13	7	6	6	2

■ **[Open]** button
If you click this **[Open]** button, Earth Observation Data Viewer starts to read the listed files in **[Open GLI Products]** dialog. An Equidistant mapped image will be displayed on the new window. The shown image is updated in the reading data progress. An **[Image Window]** displays on Fig. 4.1.1-12.
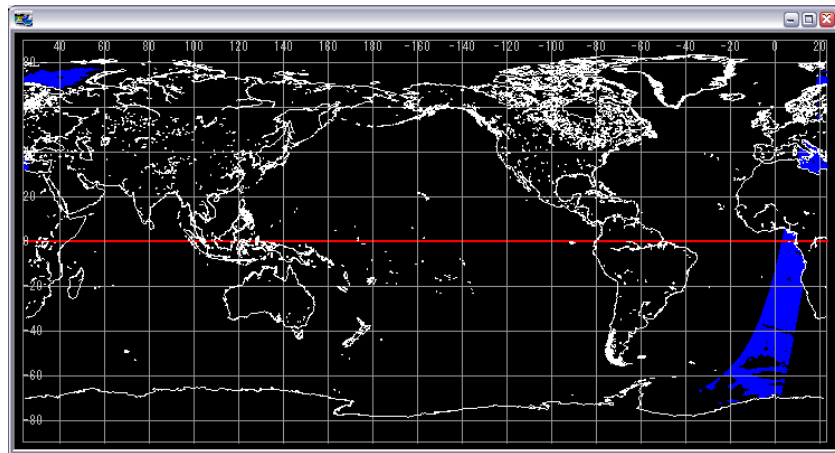
Figure 4.1.1-12 Image Window

When level 1B (satellite position information)/level 2(Land PGCP) is chosen, the "file preservation screen" which Windows offers displays, and it saves at the file of CSV.

■ **[Cancel]** button
All settings shown in the dialog are canceled and the dialog is closed.

4.1.1.3. Open TRMM Products

If the **[Open TRMM Products]** sub menu is chosen, **[File Open Dialog (TRMM)]** is displayed, and a TRMM product can be read. How to read a TRMM product is explained. **[File Open Dialog (TRMM)]** layout is shown in Fig. 4.1.1-13.

Figure 4.1.1.3-1 File Open Dialog (TRMM)

■ File Name Field

In this field, the specified file name of GLI product is displayed. It is possible to specify files by using [Add] button or drag & drop operation (Please refer to 4.1.1.1).

You must select same product level of files. The product level will be displayed on [**Level**] field.

Configurations specify the number of the maximum files in this list.
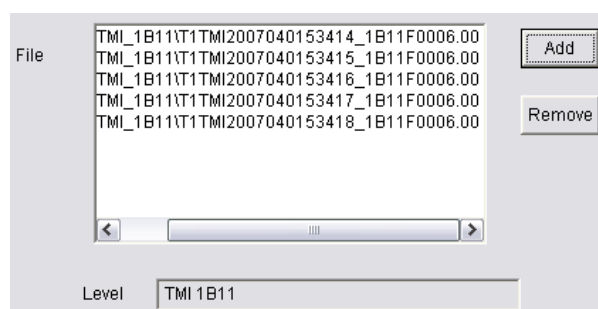
Figure 4.1.1.3-2 Result of addition to File Name Field

■ **[Add]** button

Please click this **[Add]** button to specify the files to be opened, then **[Open]** dialog provided by Windows system will be popped up. You can select plural files with mouse and pressing **[Ctrl]** key on **[Open]** dialog provided by Windows system.

■ **[Remove]** button

    If you highlight file name on the selected files list in **[Open TRMM Products]** dialog and click this **[Remove]** button, the highlighted file is removed from the list.

■ **[Single Channel] / [RGB Composite]** radio button

    You can select either Single Channel mode or RGB Composite Image mode as the image processing way. In the state of the **[Single Channel] / [RGB Composite]** radio button, change the title of a **[Color Bar Table]**.

    [Single Channel]

        The **[Color Table]** title displays as a **[Color Bar Table]**.

        You shall select one of Color Bar Table from this **[Color Bar Table]** pull down list for the Single Channel mode.

        All files of extension "clt" stored in "TRMM" folder in the color table folder are shown in this pull down list. You can select "[Automatic]" function that automatically adjusts the maximum/minimum value and color palettes.

Figure 4.1.1.3-3 [Color Bar Table] pull down

    [RGB Composite]

        The **[Color Table]** title displays as a **[Look Up Table]**.

        You shall select one of Look Up Table from this **[Look Up Table]** pull down list for the RGB Composite Image mode.

        All files of extension "lut" stored in "TRMM" folder in look-up table folder are shown in this pull down list. You can select "[Automatic]" function that automatically makes the relation between the maximum/minimum count value of each RGB channel and the product value be corresponding.
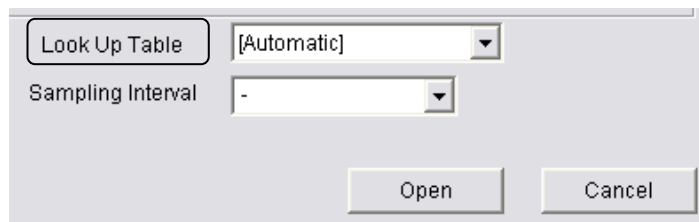
Figure 4.1.1.3-4 [Look UpTable] pull down

■ **[Frequency / Modulation]** pull down

    You can select a channel from this **[Frequency / Modulation]** pull down list.

■ **[Interval]** pull down

    You can set the sampling interval for the TRMM products from the pull down list. You can select the sampling interval from this pull down menu, also you can set the value from 1 to 99.

■ **[Open]** button

    If you click this **[Open]** button, Earth Observation Data Viewer starts to read the listed files in **[Open TRMM Products]** dialog. An Equidistant mapped image will be displayed on the new window. The shown image is updated in the reading data progress. An **[Image Window]** displays on Fig. 4.1.1.3-5.
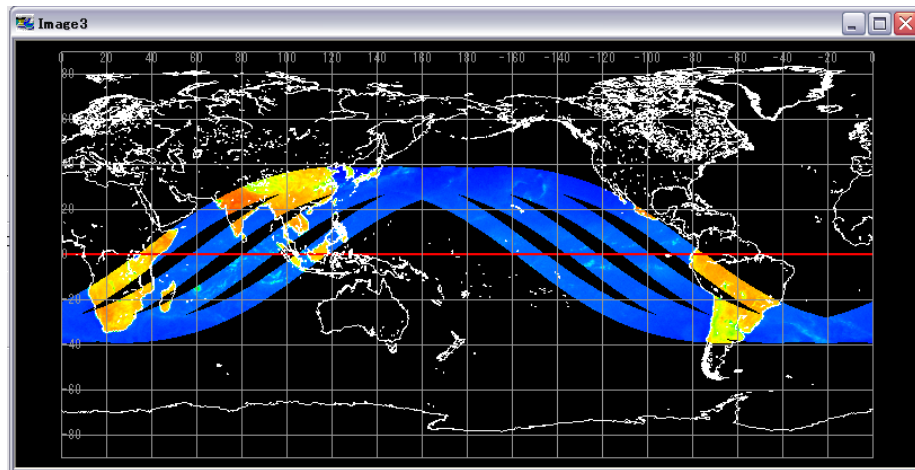
Figure 4.1.1-5 Image Window

■ **[Cancel]** button
　 All settings shown in the dialog are canceled and the dialog is closed.

4.1.1.4. Make AMSR/AMSR-E Product Animation

If the **[Make AMSR/AMSR-E Product Animation]** sub menu is chosen, **[Make AMSR/AMSR-E Product Animation Dialog]** is displayed, and the animation file of the AMSR/AMSR-E product can be created.

How to create the animation file is explained. **[Make AMSR/AMSR-E Product Animation]** layout is shown in Fig. 4.1.1.4-1.
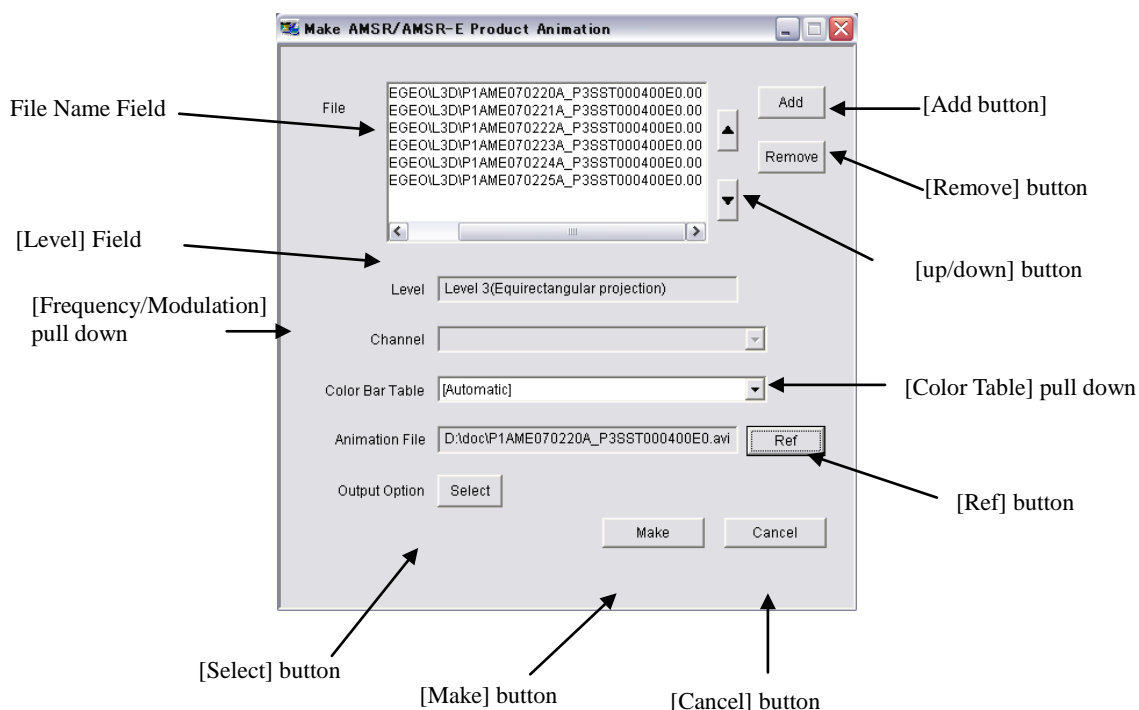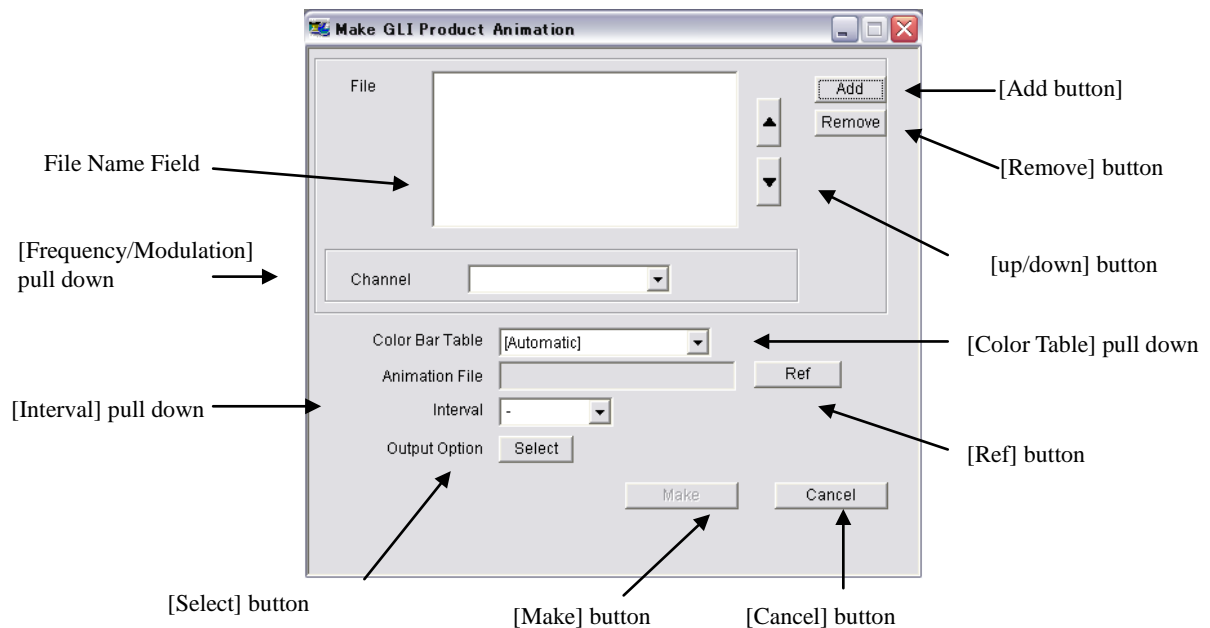

Figure 4.1.1.4-1 Make AMSR/AMSR-E Product Animation Dialog

■ File Name Field

In this field, the specified file name of AMSR/AMSR-E product is displayed. It is possible to specify files by using [Add] button or drag & drop operation (Fig. 4.1.1.4-2).
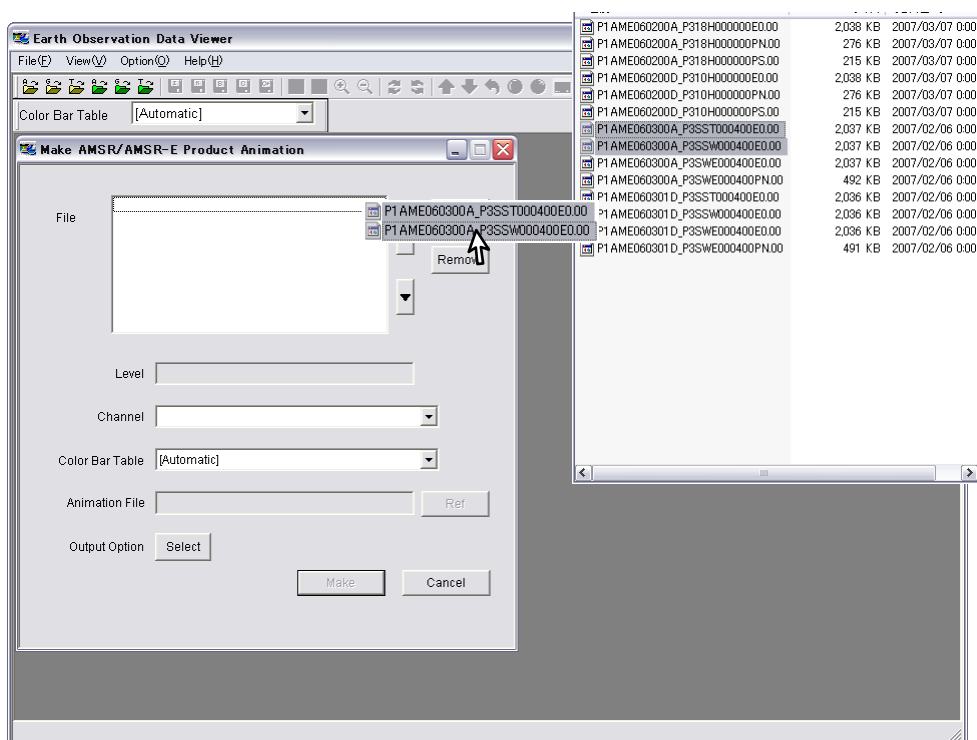
Figure 4.1.1.4-2 Drag & drop operation

You must select same product level of files. (Case of Level 3, you must also select same projection.) The product level will be displayed on [**Level**] field.
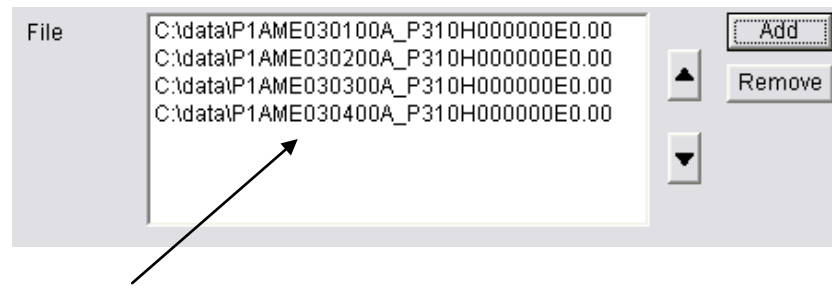
The added files

Figure 4.1.1.4-3 Result of addition to File Name Field

The added file displayd on a [File Name Field]. The number of the maximum files set up by configuration determines the number of the files which can be specified as this list.

■ **[Add]** button
Please click this **[Add]** button to specify the files to be opened, then **[Open]** dialog provided by Windows system will be popped up. You can select plural files with mouse and pressing **[Ctrl]** key on **[Open]** dialog provided by Windows system. **[File Select]** dialog layout is shown in Fig. 4.1.1.4-4.
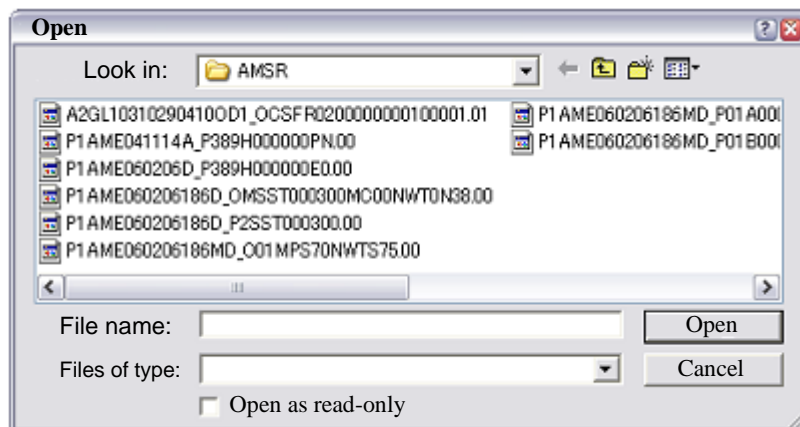
Figure 4.1.1.4-4File Select Dialog

■ **[Remove]** button
If you highlight file name on the selected files list in **[Make AMSR/AMSR-E Product Animation]** dialog and click this **[Remove]** button, the highlighted file is removed from the list.

■ **[up/down]** button
If you highlight file name on the selected files list in **[Make AMSR/MASR-E Product Animation]** dialog and click this **[up/down]** button, you can change the file order.

■ **[Frequency/Modulation]** pull down
You can select a channel from this **[Frequency / Modulation]** pull down list.

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■ **[Color Table]** pull down

The **[Color Table]** title displays as a **[Color Bar Table]**.

You shall select one of Color Bar Table from this **[Color Bar Table]** pull down list. All files of extension "clt" stored in "AMSR_AMSR-E" folder in the color table folder are shown in this pull down list. You can select "[Automatic]" function that automatically adjusts the maximum/minimum value and color palettes.

■ **[select]** button

If you click **[select]** button, then **[Animation Output Option Dialog]** is displayed.
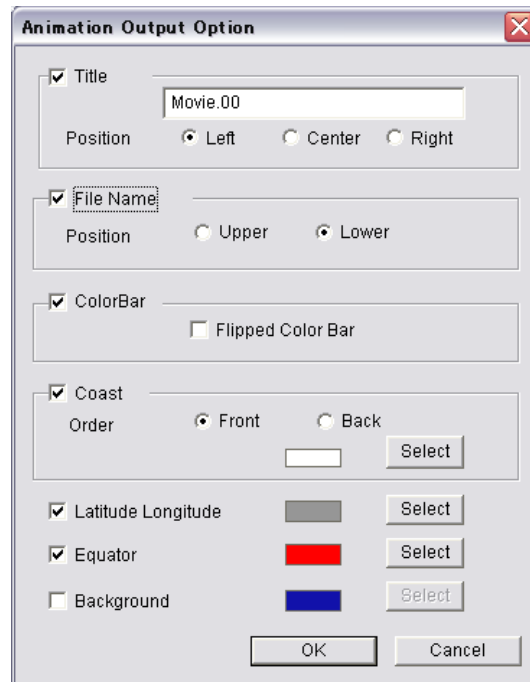
Figure 4.1.1.4-5 [Animation Output Option] dialog

If you want to display **[Title]**, **[ColorBar]**,. **[File Name]**, **[Coast]**, **[Latitude/Longitude]**, **[Equator]** and **[Background]** information, please mark each check box. Moreover, color of each line, display position of [Title] and [File Name], and the order of displaying [Coast] will be available. The display position of [Title] and [File Name] are specified from the following two kinds. Additionally, please refer to "Image output setting" (Chapter 4.3.3) and "Map layer setting" (Chapter 4.3.4) for more detail information.

[Upper]
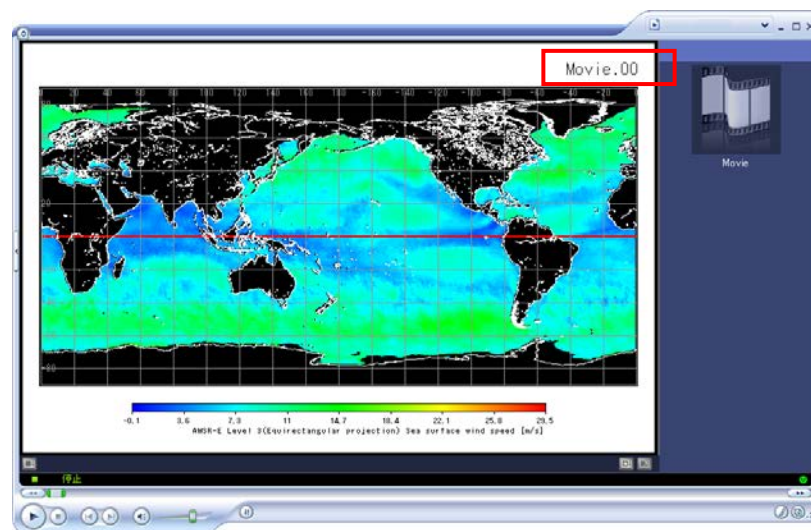
Figure 4.1.1.4-6 Example of file name display position (upper right)

[Lower]
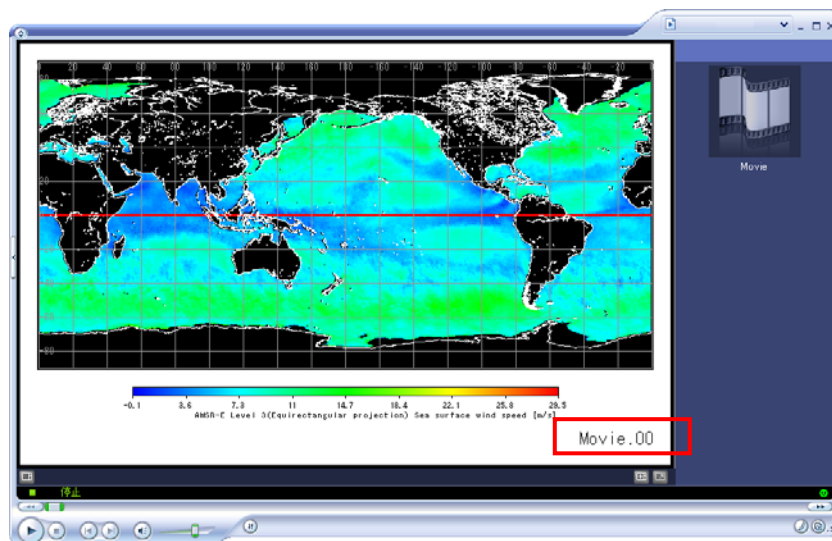
Figure 4.1.1.4-7 Example of file name display position (lower right)

■ **[ref]** button

Please click this **[ref]** button to specify the files to be saved, then **[Save As]** dialog provided by Windows system will be poped up. You can select the animation file name.

You can select the format of an animation file. (Animation format to be able to select is different by product levels. About more information of animation format to be able to select, please refer to Figure 1.3-1.)
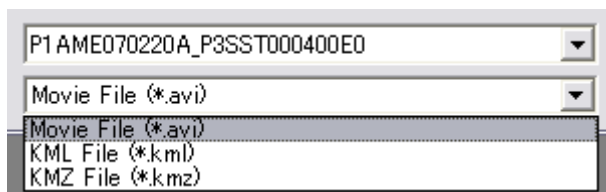
Figure 4.1.1.4-8 To select animation file of extension

AVI (Audio Video Interleave) is multimedia container format. It is used as movie or animation file format for Windows. Please use the media player such as Windows Media Player to play an AVI format file.

KML (Keyhole Markup Language) is an XML-based language schema for expressing geographic annotation on Google Earth™. This dialog can make the timeline supported KML format that changes the images depending on time. About more information of Google Earth™, please refer to Google Earth™ Web page (http://earth.google.com/intl/en/).

KMZ file format is zipped KML files and their related images. Google Earth™ can view a KMZ file likely KML files.

■ **[Make]** button

If you click **[Make]** button on the dialog, Earth Observation Data Viewer starts to create the animation file by using the listed files in **[Make AMSR/AMSR-E Products Animation]** dialog. Then, an equidistant mapped image will be displayed on the new window. And the animation file is created in the selected directory.

■ **[Cancel]** button

All settings shown in the dialog are canceled and the dialog is closed.

4.1.1.5. Make GLI Product Animation

If the **[Make GLI Product Animation]** sub menu is chosen, **[Make GLI Product Animation Dialog]** is displayed, and an animation of the GLI product can be created. How to create the animation file is explained. **[Make GLI Product Animation]** layout is shown in Fig. 4.1.1.1-5.

Figure 4.1.1.5-1 Make GLI Product Animation Dialog

■ File Name Field

In this field, the specified file name of GLI product is displayed. It is possible to specify files by using [Add] button or drag & drop operation (Please refer to 4.1.1.4).

Please specify only the GLI product for this field.

Configurations specify the number of the maximum files in this list.

■ **[Add]** button

Please click this **[Add]** button to specify the files to be opened, then **[Open]** dialog provided by Windows system will be popped up. You can select plural files with mouse and pressing **[Ctrl]** key on **[Open]** dialog provided by Windows system.

■ **[Remove]** button

If you highlight file name(s) on the selected files list in **[Make GLI Product Animation]** dialog and click this **[Remove]** button, the highlighted file(s) are removed from the list.

■ **[up/down]** button

If you highlight file name(s) on the selected files list in **[Make GLI Product Animation]** dialog and click this **[up/down]** button, you can change the file order.

■ **[Color Table]** pull down

The **[Color Table]** title displays as a **[Color Bar Table]**.

You shall select one of Color Bar Table from this **[Color Bar Table]** pull down list. All files of extension "clt" stored in the color table folder are shown in this pull down list. You can select "[Automatic]" function that automatically adjusts the maximum/minimum value and color palettes.

■ **[select]** button

If you click **[select]** button, then **[Animation Output Option Dialog]** is displayed.

■ **[ref]** button

Please click this **[ref]** button to specify the files to be saved, then **[Save As]** dialog provided by Windows system will be poped up. You can select the animation file name.

■ **[Interval]** pull down

You can set the sampling interval for the GLI products from the pull down list. You can select the sampling interval from this pull down menu, also you can set the value from 1 to 99.

■ **[Make]** button

If you click **[Make]** button on the dialog, Earth Observation Data Viewer starts to create the animation file by using the listed files in **[Make GLI Products Animation]** dialog. Then, an equidistant mapped image will be displayed on the new window. And the animation file is created in the selected directory.

■ **[Cancel]** button

All settings shown in the dialog are canceled and the dialog is closed.

4.1.1.6. Make TRMM Product Animation

If the **[Make TRMM Product Animation]** sub menu is chosen, **[Make TRMM Product Animation Dialog]** is displayed, and an animation of the TRMM product can be created. How to create the animation file is explained. **[Make TRMM Product Animation]** layout is shown in Fig. 4.1.1.6-1.
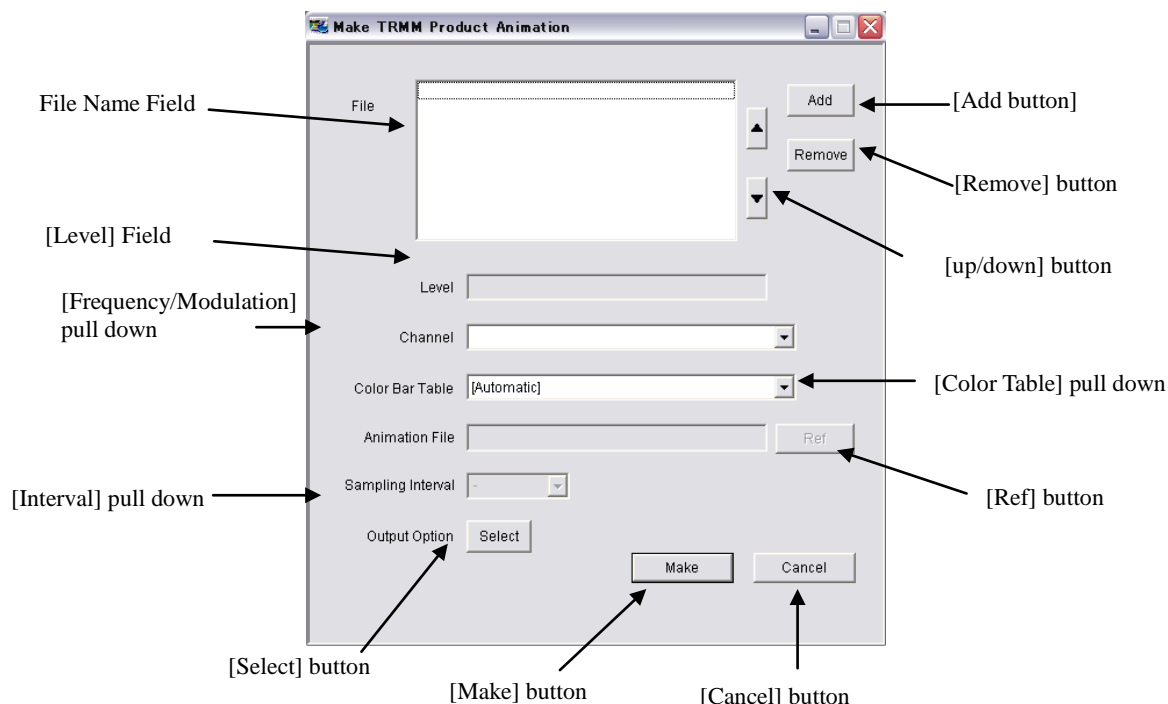
Figure4.1.1.6-1 Make TRMM Product Animation Dialog

■　File Name Field

In this field, the specified file name of GLI product is displayed. It is possible to specify files by using [Add] button or drag & drop operation (Please refer to 4.1.1.4).

You must select same product level of files. The product level will be displayed on [**Level**] field.

Configurations specify the number of the maximum files in this list.

■　**[Add]** button

Please click this **[Add]** button to specify the files to be opened, then **[Open]** dialog provided by Windows system will be popped up. You can select plural files with mouse and pressing **[Ctrl]** key on **[Open]** dialog provided by Windows system.

You must select same product level of files. The product level will be displayed on [**Level**] field.

■　**[Remove]** button

If you highlight file name(s) on the selected files list in **[Make TRMM Product Animation]** dialog and click this **[Remove]** button, the highlighted file(s) are removed from the list.

■　**[up/down]** button

If you highlight file name(s) on the selected files list in **[Make TRMM Product Animation]** dialog and click this **[up/down]** button, you can change the file order.

■　**[Color Table]** pull down

The **[Color Table]** title displays as a **[Color Bar Table]**.

You shall select one of Color Bar Table from this **[Color Bar Table]** pull down list. All files of extension "clt" stored in the color table folder are shown in this pull down list. You can select "[Automatic]" function that automatically adjusts the maximum/minimum value and color palettes.

■ **[select]** button
   If you click **[select]** button, then **[Animation Output Option Dialog]** is displayed.

■ **[ref]** button
   Please click this **[ref]** button to specify the files to be saved, then **[Save As]** dialog provided by Windows system will be poped up. You can select the animation file name.

■ **[Interval]** pull down
   You can specify the sampling interval for the TRMM products from the pull down list. You can set the value from 1 to 99.

■ **[Make]** button
   Click **[Make]** button to create animation file using specified file on the list. After creating, an equidistant mapped image will appeared automatically with a new windows.

■ **[Cancel]** button
   All settings shown in the dialog are canceled and the dialog is closed.

4.1.2. Save as Image

If you click this **[Save as Image]** menu, you can save the displayed image on a window as a file with JPEG, TIFF, PNG or Bitmap. A default output form is **[JPEG.]** Moreover, the default of a preservation file name is set to **[GRANULE_ID.jpg]**. Please select **[Save as Image]** pull down from the File Menu. Then **[Image File]** dialog will be popped up. **[Image File]** dialog layout is shown in Fig. 4.1.2-1.
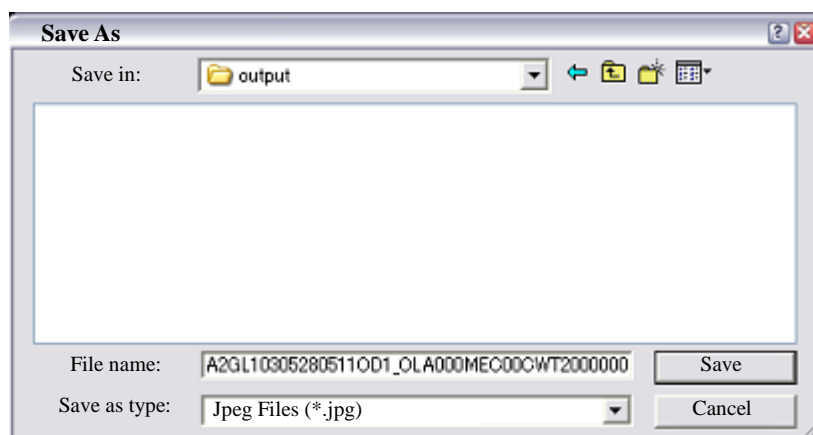
Figure 4.1.2-1 Image File Dialog

The example of preservation of a picture is shown in Fig. 4.1.2-2.
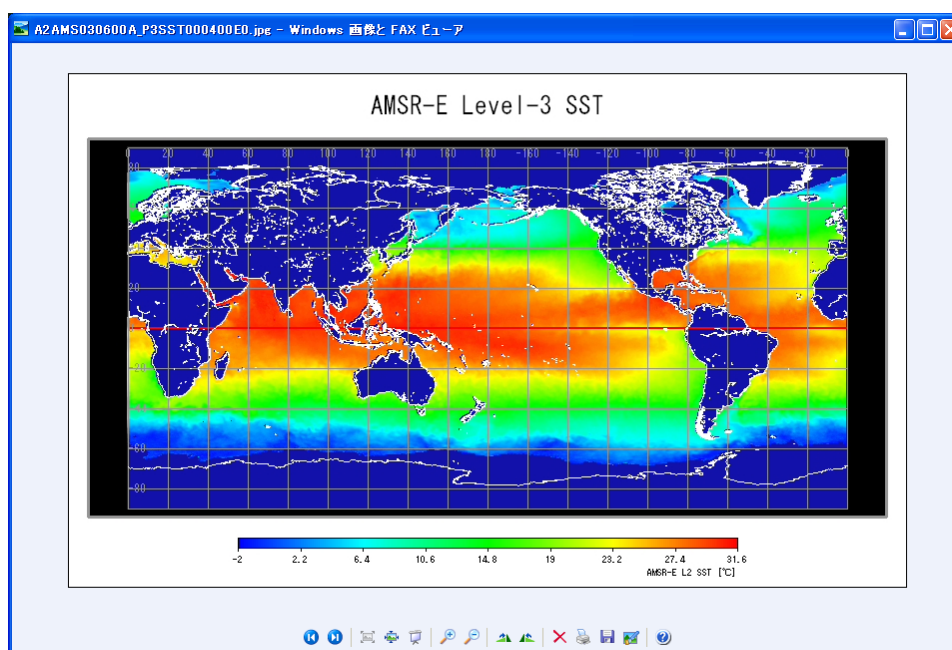
Figure 4.1.2-2 Example of preservation of an image

4.1.3. Save as KML(KMZ)

If you click this **[Save as KML(KMZ)]** menu, you can save the displayed image on a window as a file with KML Format. Moreover, when the area is specified by SELECT mode, the image within the selected area can be saved. About SELECT mode, please refer to **[4.2.11 SELECT mode]**.

Please select **[Save as KML(KMZ)]** pull down from the File Menu. Then **[KML File]** dialog will be popped up. **[KML File]** dialog layout is shown in Fig. 4.1.3-1. Choose KML or KMZ file format.

The KML file format details please refer to [appendix A.3 KML file].
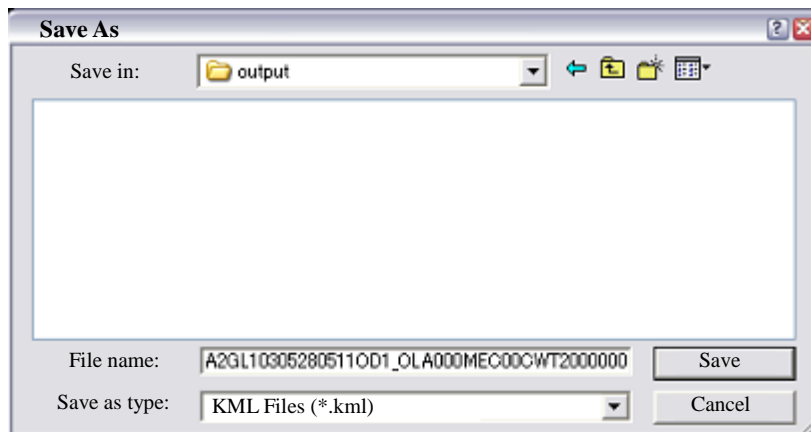
Figure 4.1.3-1 KML File Save Dialog

4.1.4. Save as Binary

If you click this **[Save as Binary]** menu, you can save the displayed image on a window as a file with Binary Format. The byte order of preservation data can be specifyed **[big endian]** and **[little endian]**. Please refer to [3.2.3 Preferences] about the select byte order.

Please select **[Save BIN Data]** pull down from the File Menu. Then **[Binary File Save]** dialog will be popped up. **[Binary File Save]** dialog layout is shown in Fig. 4.1.4-1. Specifying the file name, please click the save button. But, there are some cases that the file cannot be saved because of the display condition of resolution etc. In these cases, the error message is displayed. If so, please follow the message. Fig. 4.1.4-2 shows an example of the error message.

The default of a preservation file name is set to **[GRANULE_ID.bin]**.

The Binary file format details please refer to [appendix A.1 Binary file].
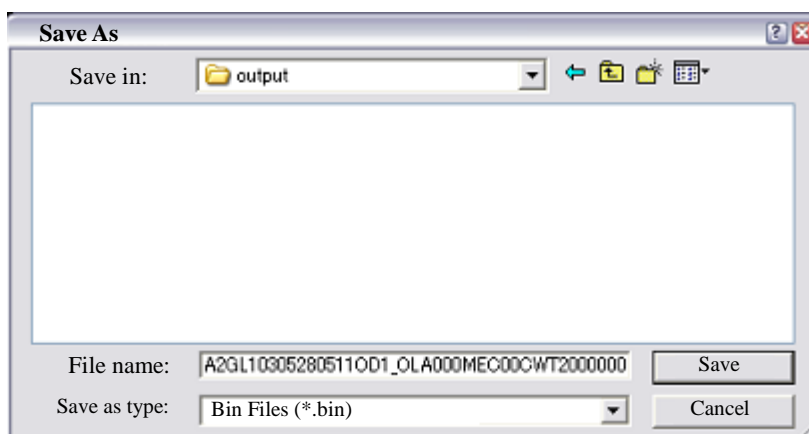
Figure 4.1.4-1 Binary File Save Dialog
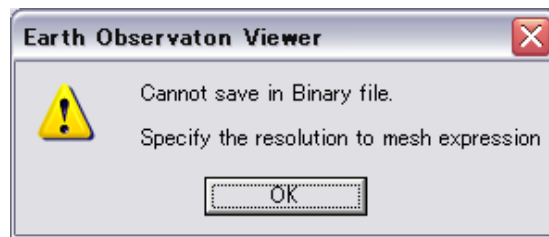
Figure 4.1.4-2 Binary File Saving Condition Dialog

4.1.5. Save as CSV

If you click this **[Save as CSV]** menu, the observation data of the area chosen can be saved at the file of CSV. There are two sub menus in a file open menu.

(1)　Save value only
(2)　Save value with Latitude and Longitude

Sub menus are shown in Fig. 4.1.5-1.
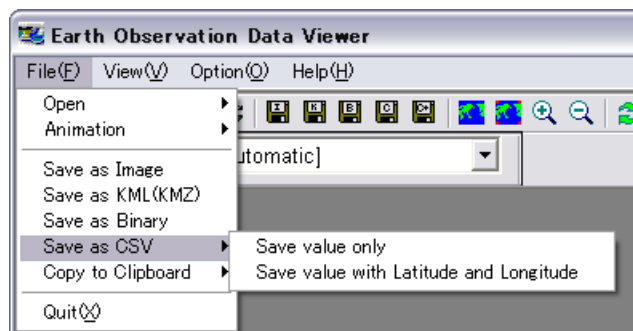
Figure 4.1.5-1 [Save as CSV] sub menu

4.1.5.1. Save value only

When this sub menu is chosen, **[Save as CSV]** is displayed, and can output a CSV file without latitude longitude for the observation data of the area chosen. **[Save as CSV]** layout is shown in Fig. 4.1.5-2. But, there are some cases that the file cannot be saved because of the display condition of resolution etc. In these cases, the error message is displayed. If so, please follow the message.
The default of a preservation file name is set to **[GRANULE_ID.csv]**.
The CSV file format details please refer to [appendix A.2 CSV file].
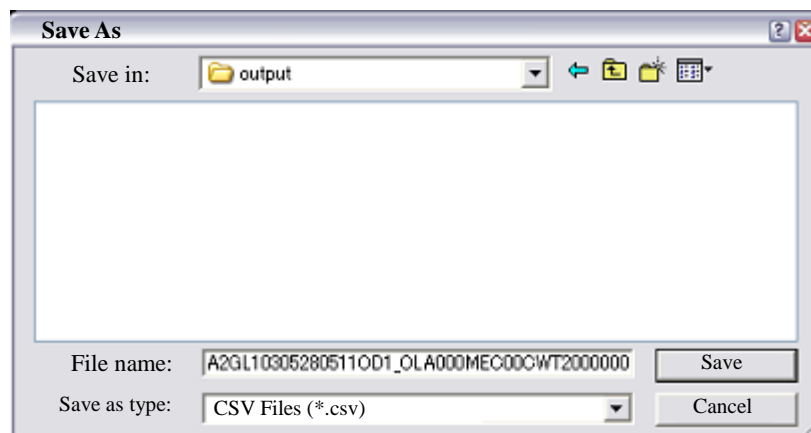
Figure 4.1.5-2 Save as CSV Dialog

4.1.5.2. Save value with Latitude and Longitude

When this sub menu is chosen, **[Save as CSV]** is displayed, and can output a CSV file with latitude longitude for the observation data of the area chosen. **[Save as CSV]** layout is shown in Fig. 4.1.5-2. But, there are some cases that the file cannot be saved because of the display condition of resolution etc. In these cases, the error message is displayed. If so, please follow the message. Fig. 4.1.5-3 shows an example of the error message.

The CSV file format details please refer to [appendix A.2 CSV file].
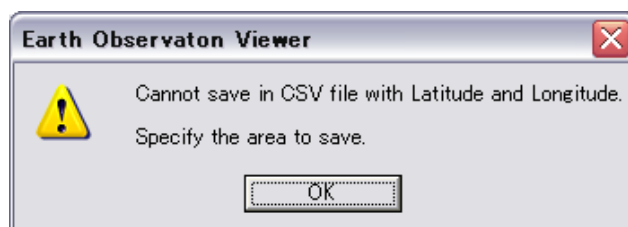
Figure 4.1.5-3 CSV File Saving Condition Dialog

4.1.6. Copy to Clipboard

This function is to copy a displayed image to Windows clipboard. You can copy the displayed image to another application easily.

This menu has the following two kind of sub function.

(1) Copy (Window)
Copy an image on the window.

(2) Copy (Selected Area)
Copy the selected area on image window. Please refer to [4.2.11 SELECT Mode] about to select area.

4.1.7. Quit

If you want to terminate Earth Observation Data Viewer, please select **[Quit (X)]** pull down from the File Menu.

4.2. View Menu

There are 12 sub menus in a file menu.

(1) Tool Bar
(2) Status Bar
(3) Preferences
(4) Zoom
(5) Map Projection
(6) Resolution
(7) Interpolation
(8) Core Meta Data
(9) ZOOM Mode
(10) PAN Mode
(11) SELECT Mode
(12) Select Area

File menu is shown by figure 4.2-1 and explains each menu.
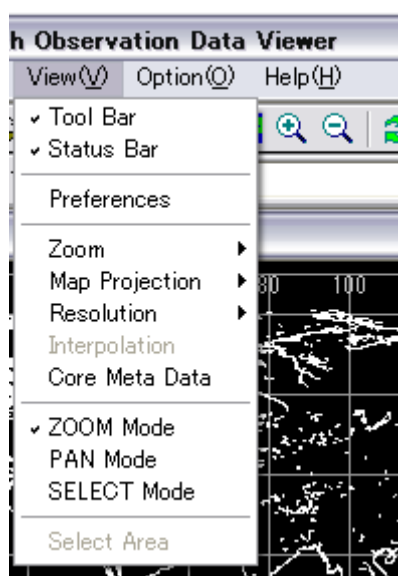
Figure 4.2-1 View Menu Pull Down

4.2.1. Tool Bar

If you click this **[Tool Bar]** menu, a tool bar can be made an available or not available. The Window with ToolBar layout is shown in Fig. 4.2.1-1.

A ToolBar not available Window layout is shown in Fig. 4.2.1-2.

[The Window with ToolBar layout]
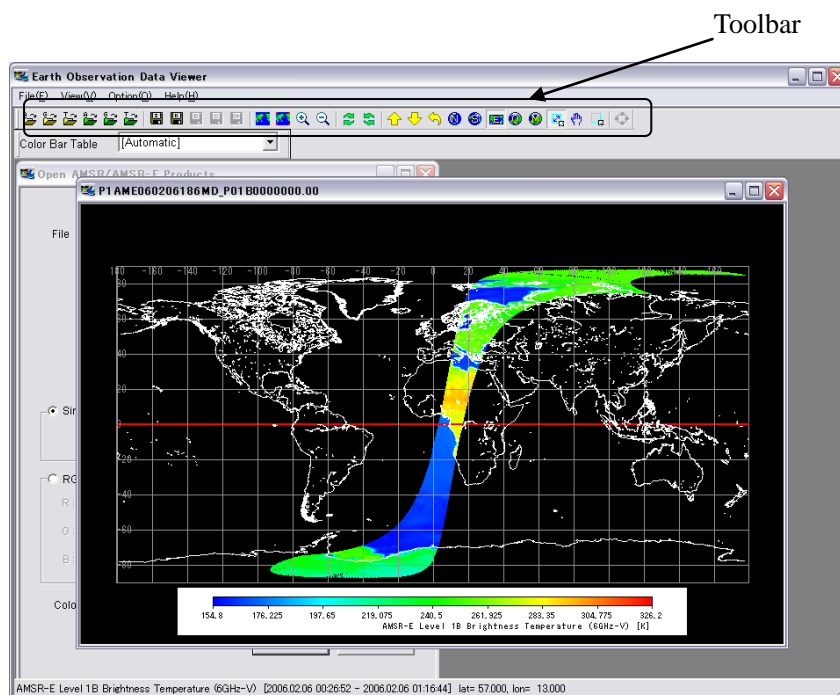
Figure 4.2.1-1 The Window with ToolBar layout

[The Window without ToolBar layout]
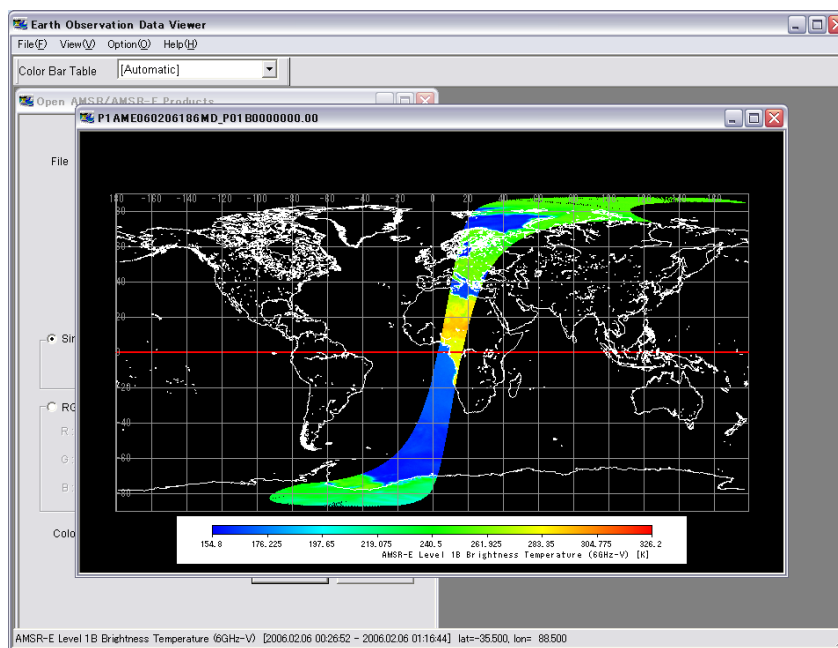
Figure 4.2.1-2 The Window without ToolBar layout

ToolBar layout is shown in Fig. 4.2.1-3.
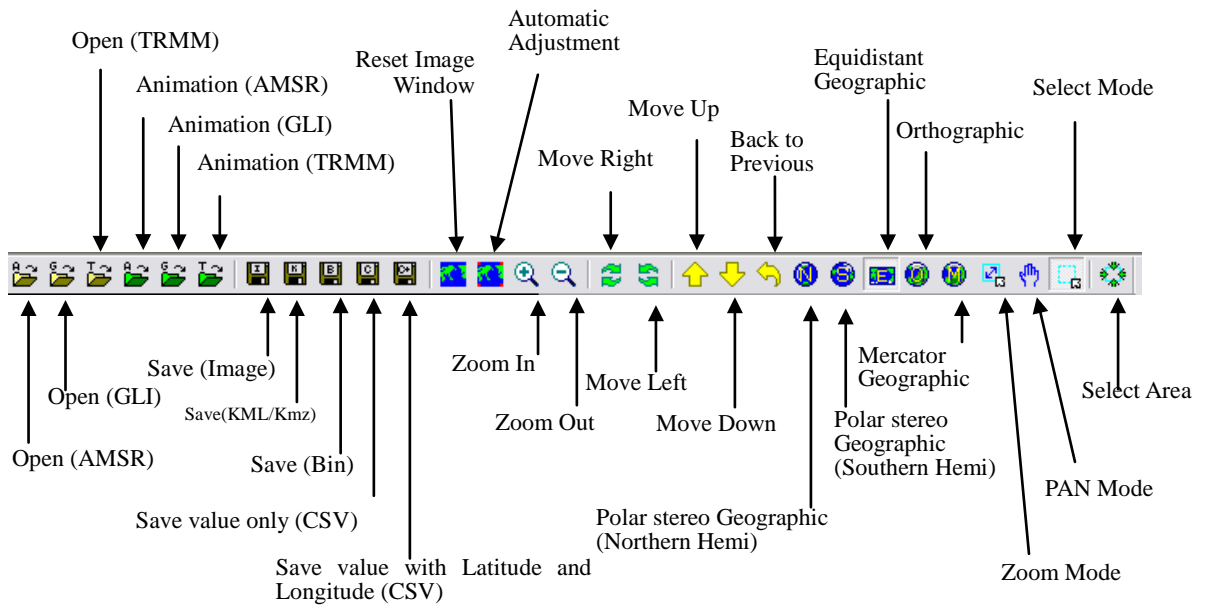
Figure 4.2.1-3 Tool Bar

There are 29 buttons on **[Tool Bar]** and some of them are not available until an image window is displayed.

[Image Window is displaying]

Figure 4.2.1-4 Image Window is displaying

[No Image Window]

Figure 4.2.1-5 No Image Window

The icon of a tool bar is explained as follows.

1) [Open(AMSR)]

If you click this **[Open (AMSR)]** icon, an AMSR product can be read. Please refer to [4.1.1.1 Open AMSR Products] about reading of an AMSR product.

2) [Open(GLI)]

If you click this **[Open (GLI)]** icon, a GLI product can be read. Please refer to [4.1.1.2 Open GLI Products] about reading of a GLI product.

3) [Open(TRMM)]

If you click this **[Open (TRMM)]** icon, a TRMM product can be read. Please refer to [4.1.1.3 Open TRMM Products] about reading of a TRMM product.

4) [Make Animation (AMSR)]

If you click this **[Make Animation (AMSR)]** icon, an animation file is created by using AMSR products. Please refer the [4.1.1.4 Make AMSR/AMSR-E Product Animation].

5) [Make Animation (GLI)]

If you click this **[Make Animation (GLI)]** icon, an animation file is created by using GLI products. Please refer the [4.1.1.5 Make GLI Product Animation].

6) [Make Animation (TRMM)]

If you click this **[Make Animation (TRMM)]** icon, an animation file is created by using TRMM products. Please refer the [4.1.1.6 Make TRMM Product Animation].

7) [Save (Image)]

If you click this **[Save (Image)]** icon, you can save the displayed image on a window as a file with JPEG, TIFF, PNG or Bitmap. Please refer to [4.1.2 Save Image] about save of an Image file.

8) [Save (KML/KMZ)]

If you click this **[Save (KML/KMZ)]** icon, you can save the displayed image on a window as a file with KML Format. Please refer to [4.1.3 Save KML(KMZ) Format] about save of a KML/KMZ file.

9) [Save (Binary)]

If you click this **[Save (Binary)]** icon, you can save the displayed image on a window as a file with Binary Format. Please refer to [4.1.4 Save Binary Format] about save of a Binary file.

10) [Save value only (CSV)]

If you click this **[Save value only (CSV)]** icon, you can save the displayed image on a window as a file with CSV Format without latitude longitude information. Please refer to [4.1.5 Save CSV Format] about save of a CSV file.

11) [Save value with Latitude and Longitude (CSV)]

If you click this **[Save value only (CSV)]** icon, you can save the displayed image on a window as a file with CSV Format with latitude longitude information. Please refer to [4.1.5 Save CSV Format] about save of a CSV file.

12) [Reset Image Window]

If you click this **[Reset Image Window]** icon, the center location of the shown image and/or its zoom ratio is set back to the previous shown image. But the image window size is maintained as the latest. Please refer to [4.2.4 ZoomIn and Out] about display reset of image.

13) [Automatic Adjustment]

If you click this **[Automatic Adjustment]** icon, the image window size is adjusted automatically. Please refer to [4.2.4 ZoomIn and Out].

14) [Zoom In]

If you click this **[Zoom In]** icon, the image is zoomed in, but the center location of the shown image is not changed. Please refer to [4.2.4 Zoom] about ZoomIn of image.

15) [Zoom Out]

If you click this **[Zoom Out]** icon, the image is zoomed out, but the center location of the shown image is not changed. Please refer to [4.2.4 Zoom] about ZoomOut of image.

16) [Move Right]

If you click this **[Move Right]** icon, the window of the image is moved to the right with 40 degrees. The situation of right rotation is shown in Fig. 4.2.1-6.
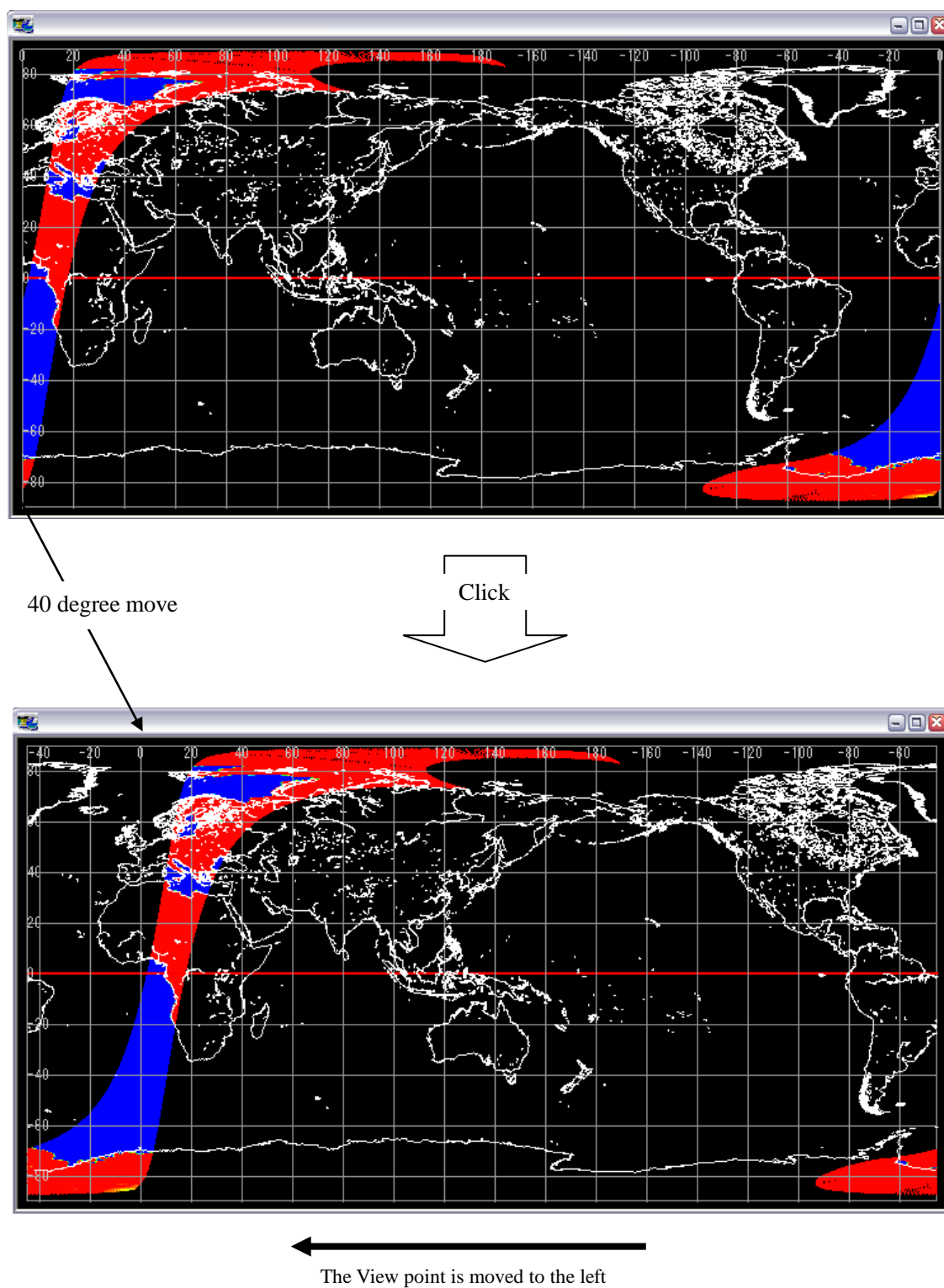

Click

40 degree move

The view point is moved to the right
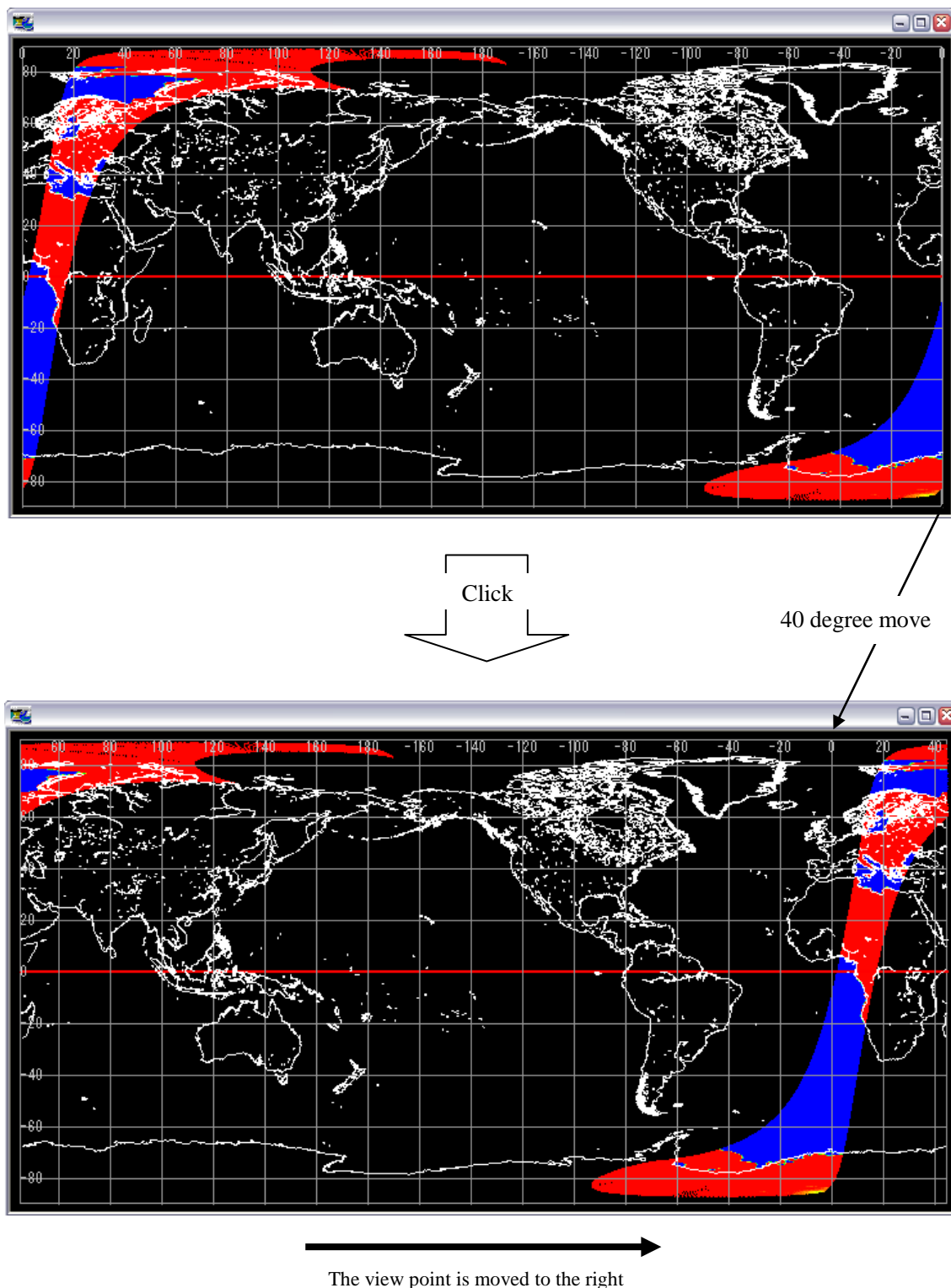
Figure 4.2.1-6 Move Right

17) [Move Left]

If you click this **[Move Left]** icon, the window of the image is moved to the left with 40 degrees. The situation of left rotation is shown in Fig. 4.2.1-7.

40 degree move

Click

The View point is moved to the left

Figure 4.2.1-7 Move Left

18) [Move Up]
   If you click this **[Move Up]** icon, the window of the image is moved up. The situation of moved up is shown in Fig. 4.2.1-8.

Click
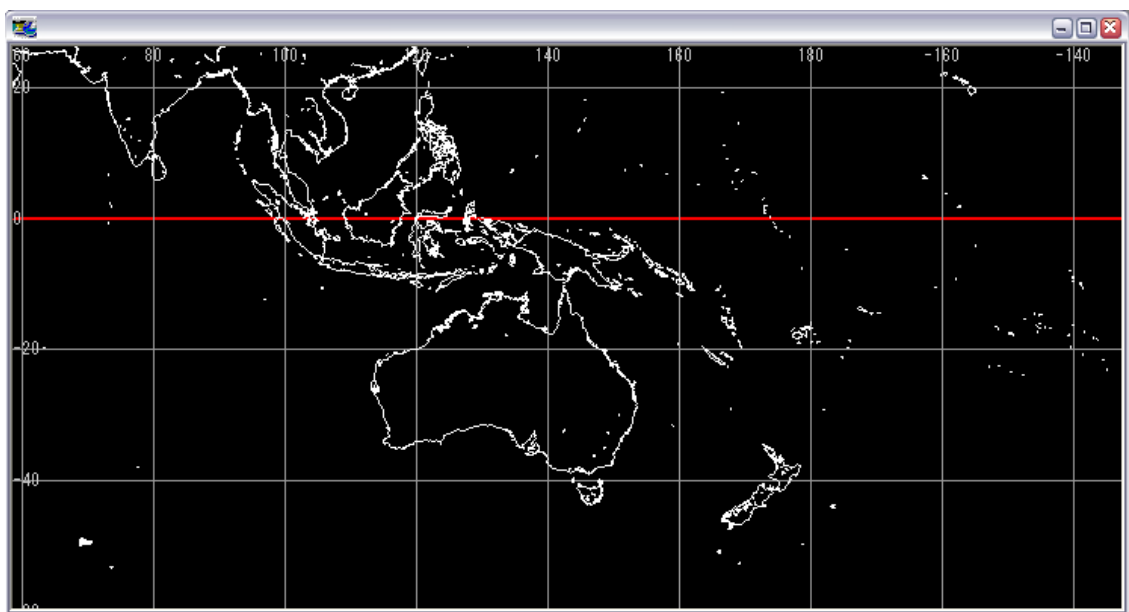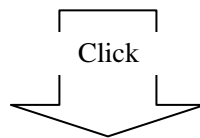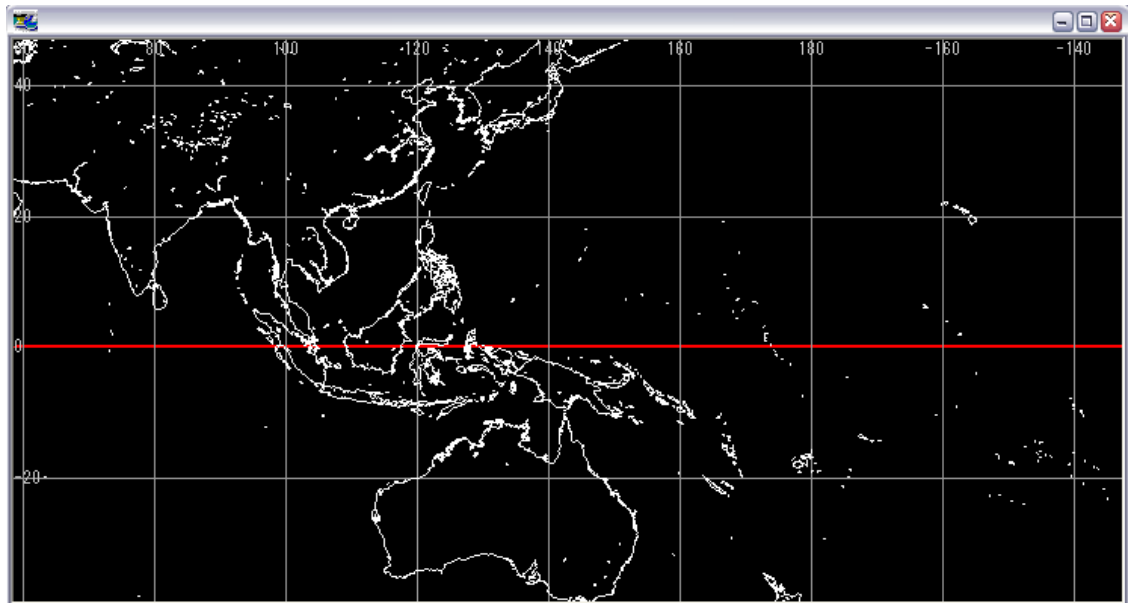
image is Moved UP

Figure 4.2.1-8 Move Up

19) [Move Down]

If you click this **[Move Down]** icon, the window of the image is moved down. The situation of moved down is shown in Fig. 4.2.1-9.
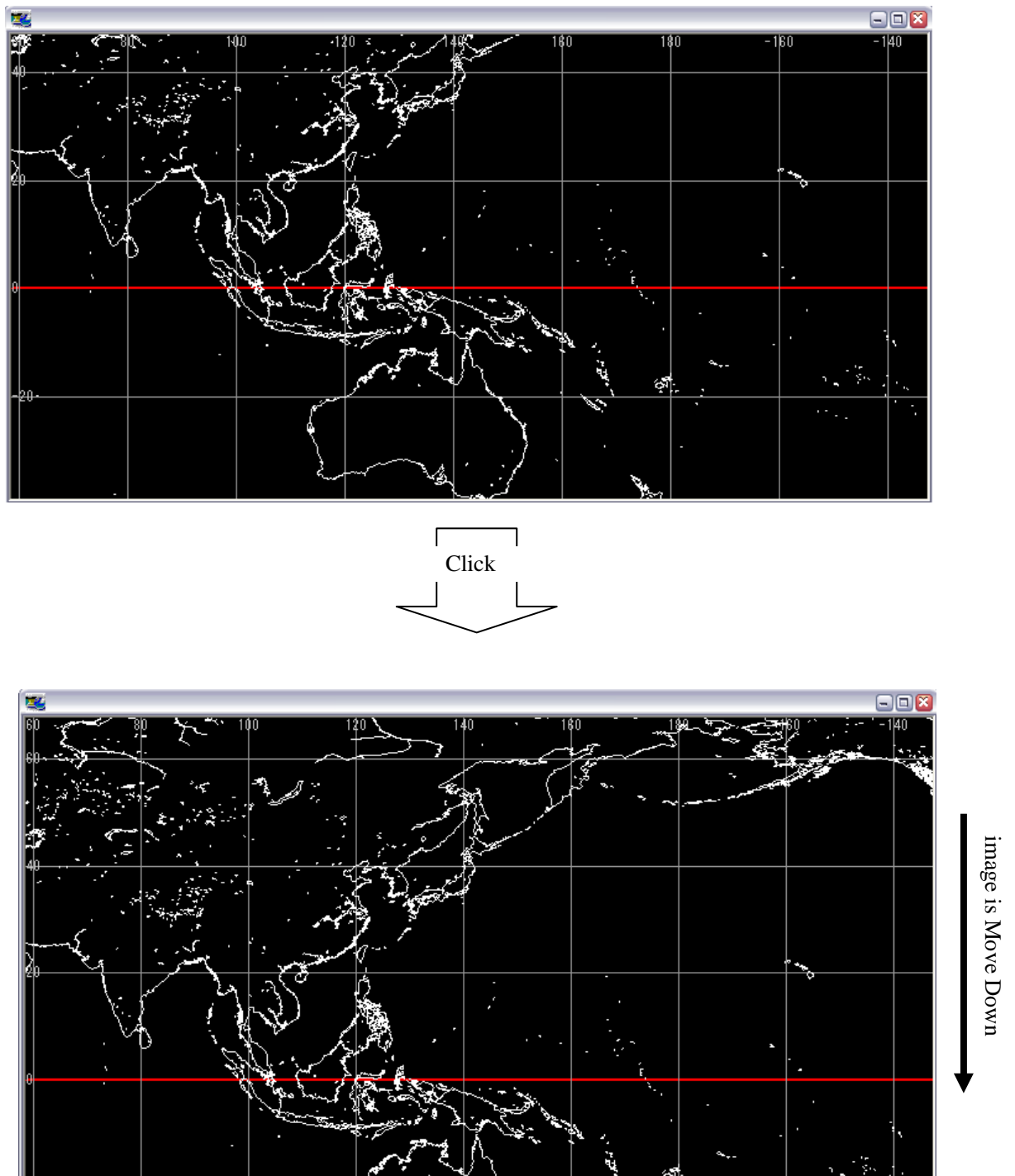
Figure 4.2.1-9 Move Down

20) [Back to Previous]

   If you click this **[Back to Previous]** icon, it can return to the state before operating a map display. but cannot change size of Window.

21) [PS North]

   If you click this **[PS North]** icon, an image can be displayed of North Polar stereo Geographic Projection. Please refer to [4.2.5 Map projection] about Map projection of image.

22) [PS South]

   If you click this **[PS South]** icon, an image can be displayed of South Polar stereo Geographic Projection. Please refer to [4.2.5 Map projection] about Map projection of image.

23) [Equidistant Geographic]

   If you click this **[Equidistant Geographic]** icon, an image can be displayed of Equidistant Geographic Projection. Please refer to [4.2.5 Map projection] about Map projection of image.

24) [Orthographic]

   If you click this **[Orthographic]** icon, an image can be displayed of Orthographic Projection. Please refer to [4.2.5 Map projection] about Map projection of image.

25) [Mercator Geographic]

   If you click this **[Mercator Geographic]** icon, an image can be displayed of Mercator Geographic Projection. Please refer to [4.2.5 Map projection] about Map projection of image.

26) [ZOOM Mode]

   If you click this **[ZOOM Mode]** icon, a specified are can be zoomed in and a domain is chosen on a map, the domain specified with the mouse is zoomed in.
   Please refer to [4.2.9 ZOOM Mode] about ZoomIn of image.

27) [PAN Mode]

   If you click on this **[PAN Mode]** icon and a map is moved if mouse moves pushing the left button of a mouse. Please refer to [4.2.10 PAN Mode] about Move of image.

28) [SELECT Mode]

   If you click on this **[SELECT Mode]** icon, a specified are can be selected and appoint a area to clip out with a mouse. And it can save the domain that it clipped out.
   Please refer to [4.2.11 SELECT Mode] about Domain clipping of image.

29) [Select Area]

   If you click on this **[Select Area]** icon, a specified are can be selected by latitude and longitude and appoint a area to clip out. And it can save the area that it clipped out. Please refer to [4.2.12 Select Area] about Domain clipping of image.

4.2.2. Status Bar

If you click this **[Status Bar]** menu, a tool bar can be made an available or not available.

The Window with StatusBar layout is shown in Fig. 4.2.2-1. A StatusBar not available Window layout is shown in Fig. 4.2.2-2.

[The Window with Status Bar layout]
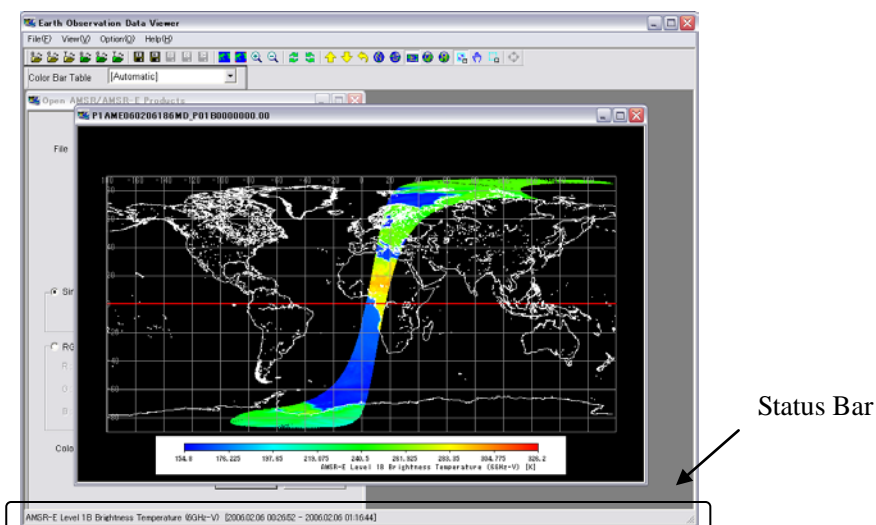
Figure 4.2.2-1 The Window with Status Bar layout

[The Window without Status Bar layout]
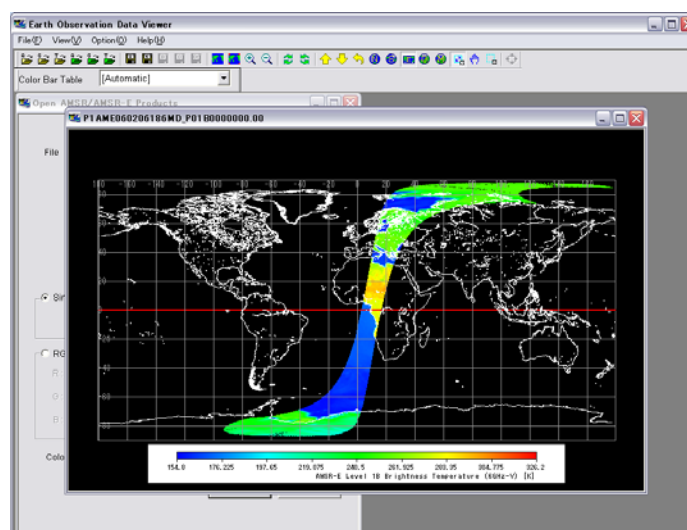
Figure 4.2.2-2 The Window without Status Bar layout

The latitude longitude and value observation data (value converted into the amount of physics by the scale factor) of a location of cursor are displayed on a status bar. The value observation data on a status bar is displayed only when a setup of resolution is as a mesh display. However, value observation data is not displayed when a picture display is wide range. In such a case, please expand the area that checks value observation data.

When you select a single channel, it is displayed that the information (sensor name, product level, channel and observation time) of the earth observation data on a status bar.

[The product information and Lat / on]

AMSR-E Level 1B Brightness Temperature (6GHz-V) [2006.02.06 00:26:52 - 2006.02.06 01:16:44] lat= 5.000, lon= 16.000

[The product information and Lat / on, observation data]

AMSR-E Level 1B Brightness Temperature (6GHz-V) [2006.02.06 00:26:52 - 2006.02.06 01:16:44] lat= 17.579, lon= 14.963   VALUE= 292.588898

Table.4.2.2-1 Correspondence table of display method and status bar display item

Status bar display item	Single channel		RGB composite	
	-	Mesh display	-	Mesh display
Sensor name	○	○		
Product level	○	○		
Channel	○	○		
Observation time	○	○		
Observation Lat/on	○	○	○	○
Value observation data		○		○

4.2.3. Preferences

If you click this **[Preferences]** menu, **[Preferences Dialog]** can display and initial information can be set up. **[Preferences Dialog]** layout is shown in Fig. 4.2.3-1.
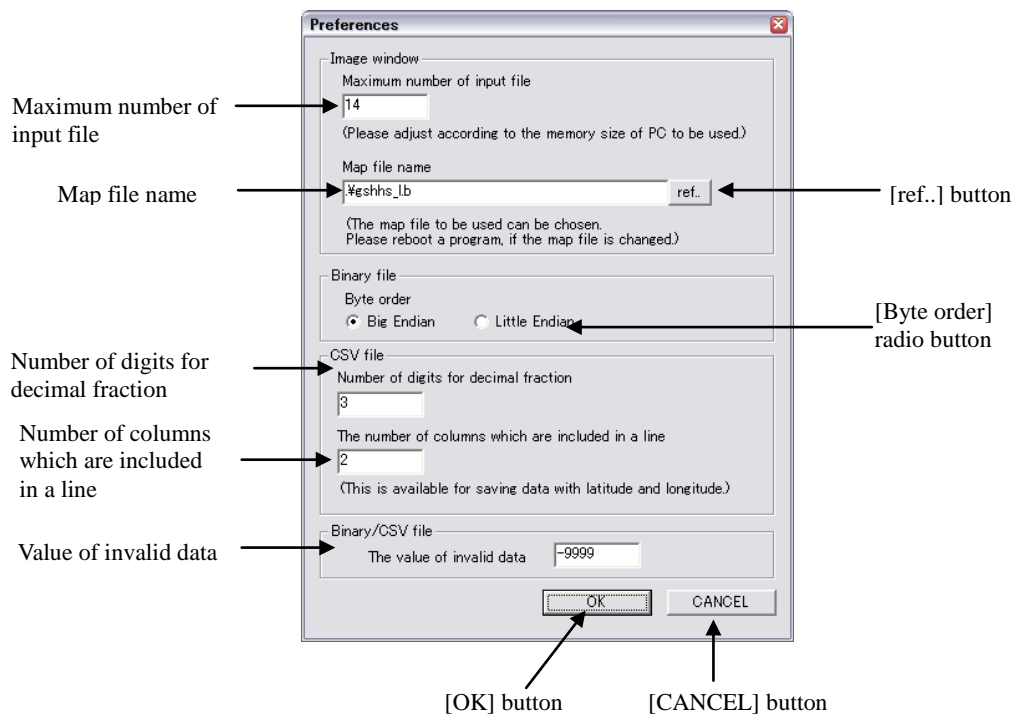
Figure 4.2.3-1 Preferences Dialog

■ **[Maximum number of input file]**
Please specify a maximum number of the product file which input simultaneously.

■ **[Map file name]**
Please specify a map file. It is necessary to reboot this software if it is changed.

■ **[ref..]** button
Please click this **[ref.]** button to specify the files to be opened, then **[Open]** dialog provided by Windows system will be popped up. A map file is specified.

■ **[Byte order]** radio button
When you save image to file as binary, please turn on either radio button **[Big   Endian]** or **[Little Endian]**.

■ **[Value of invalid data]**
When an image is saved as CSV or a binary format, you could specify the particular value (-32768 to 32767) as invalid data to the region that is not observed or masked.

■ **[Number of digits for decimal fraction]**
Plase specify a decimal place of output data to a CSV file.

■ **[Number of columns which are included in a line]**
Please specify the number of the columns that are outputted to one line.

■ **[OK]** button
If you click this **[OK]** button, the set-up contents are saved at a parameter file.

■ **[CANCEL]** button
All setting shown in the dialog are canceled and the dialog is dismissed.

4.2.4. Zoom

If you click this [**Zoom**] menu, a picture can be Zoom In and Zoom Out. There are five menus in a file open menu.

    (1)   Automatic Adjustment
    (2)   Zoom In
    (3)   Zoom Out
    (4)   Reset Image Window
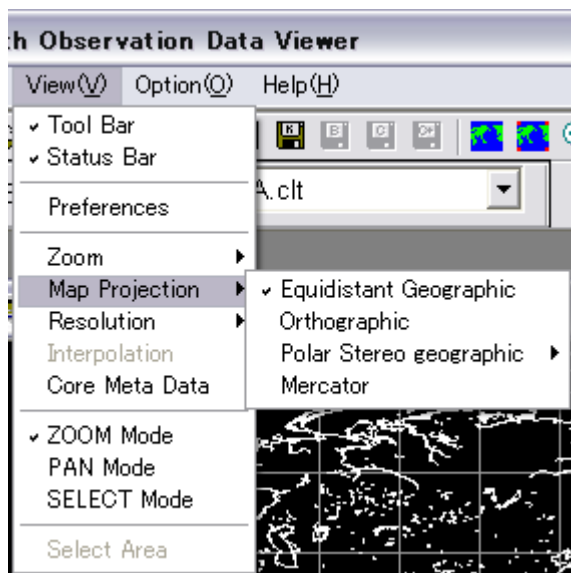   (5)   Back to Previous

Sub menus are shown in Fig. 4.2.4-1.
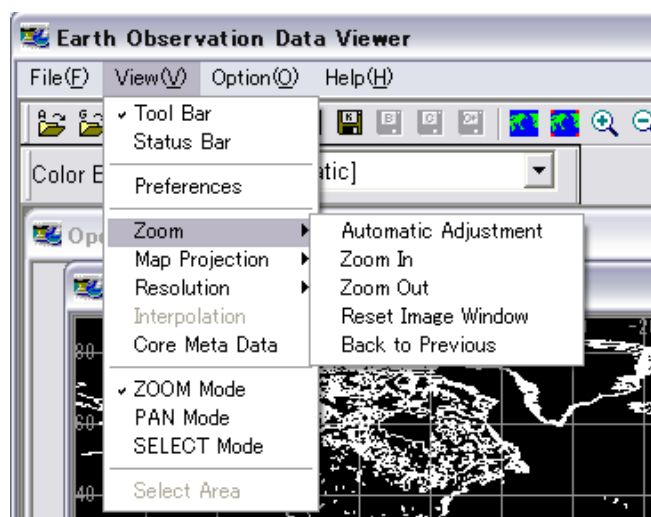
Figure 4.2.4-1 [Zoom] sub menu

This menu corresponds to the following icons of a tool bar. The tool bar icon corresponding to a sub menu is shown in Fig. 4.2.4-2.
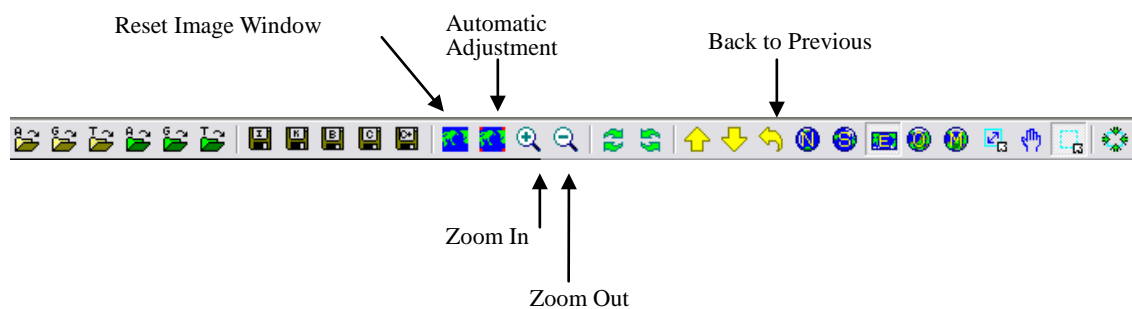
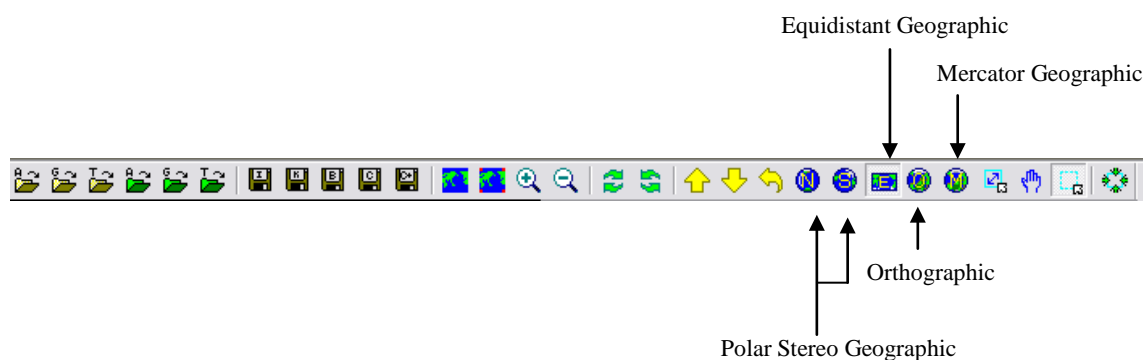Figure 4.2.4-2 [Zoom] menu and Tool Bar

4.2.4.1. Automatic Adjustment

If you click this **[Automatic Adjustment]** menu, the image window size is adjusted automatically. The process of this function is shown in Fig. 4.2.4-3.

Expand of the map image

Adjust the image window size
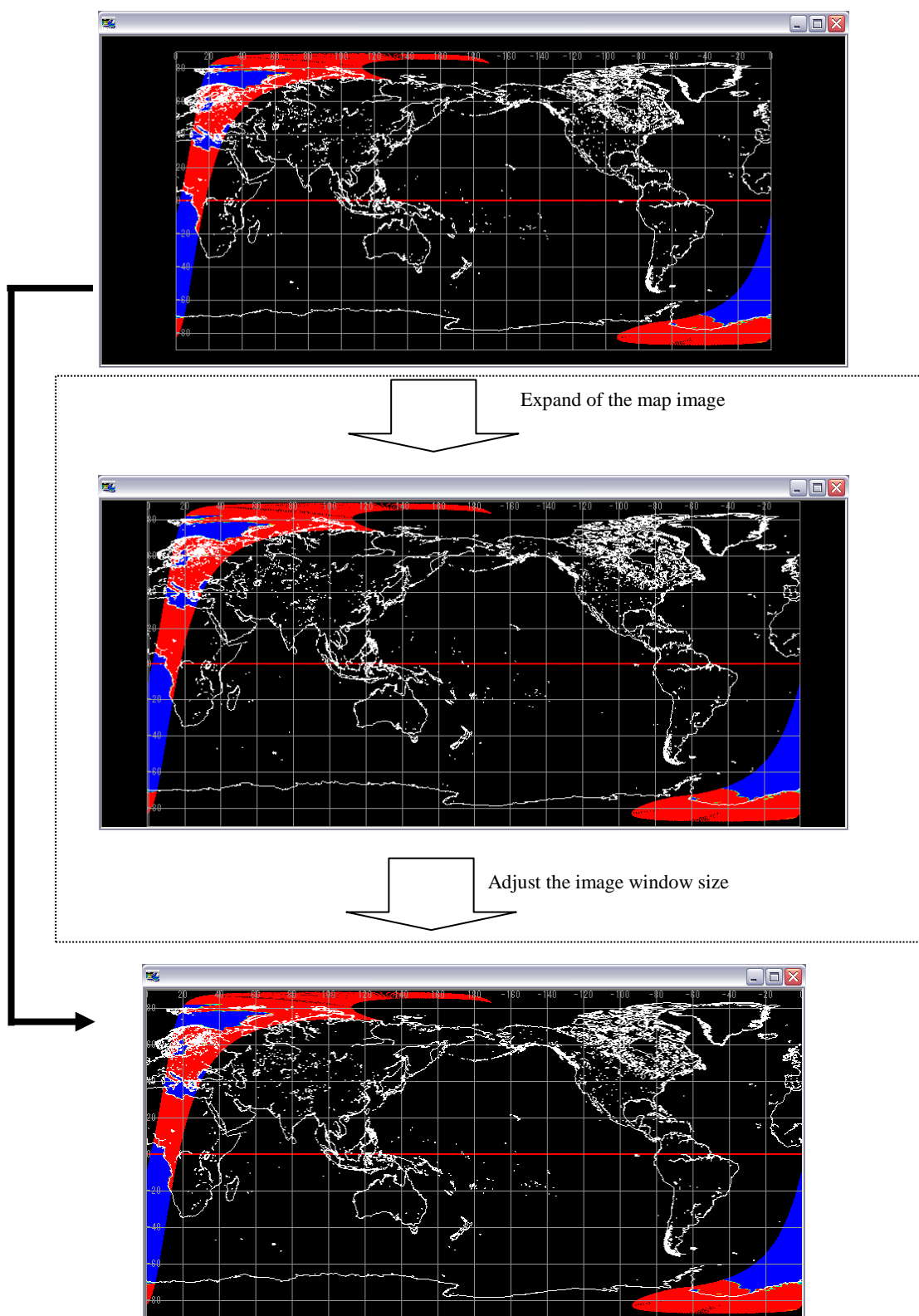
Figure 4.2.4-3 Automatic Adjustment

4.2.4.2. Zoom In

If you click this [**Zoom In**] menu, the image is zoomed in but the center location of the shown image is not changed. The map display after zoomed in before zoomed in is shown in Fig. 4.2.4-4.
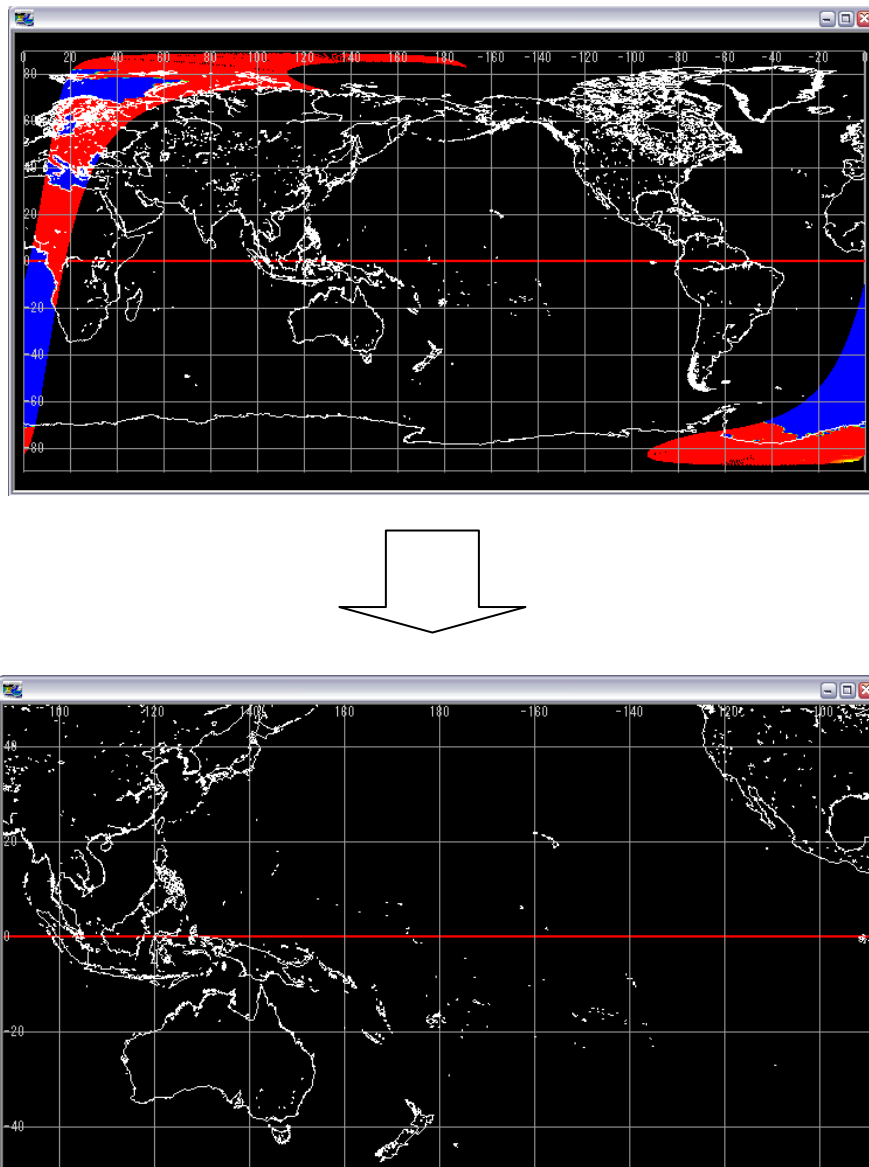
Figure 4.2.4-4 Zoom In

4.2.4.3. Zoom Out

If you click this [**Zoom Out**] menu, the image is zoomed out but the center location of the shown image is not changed. The map display after zoomed out before zoomed out is shown in Fig. 4.2.4-5.
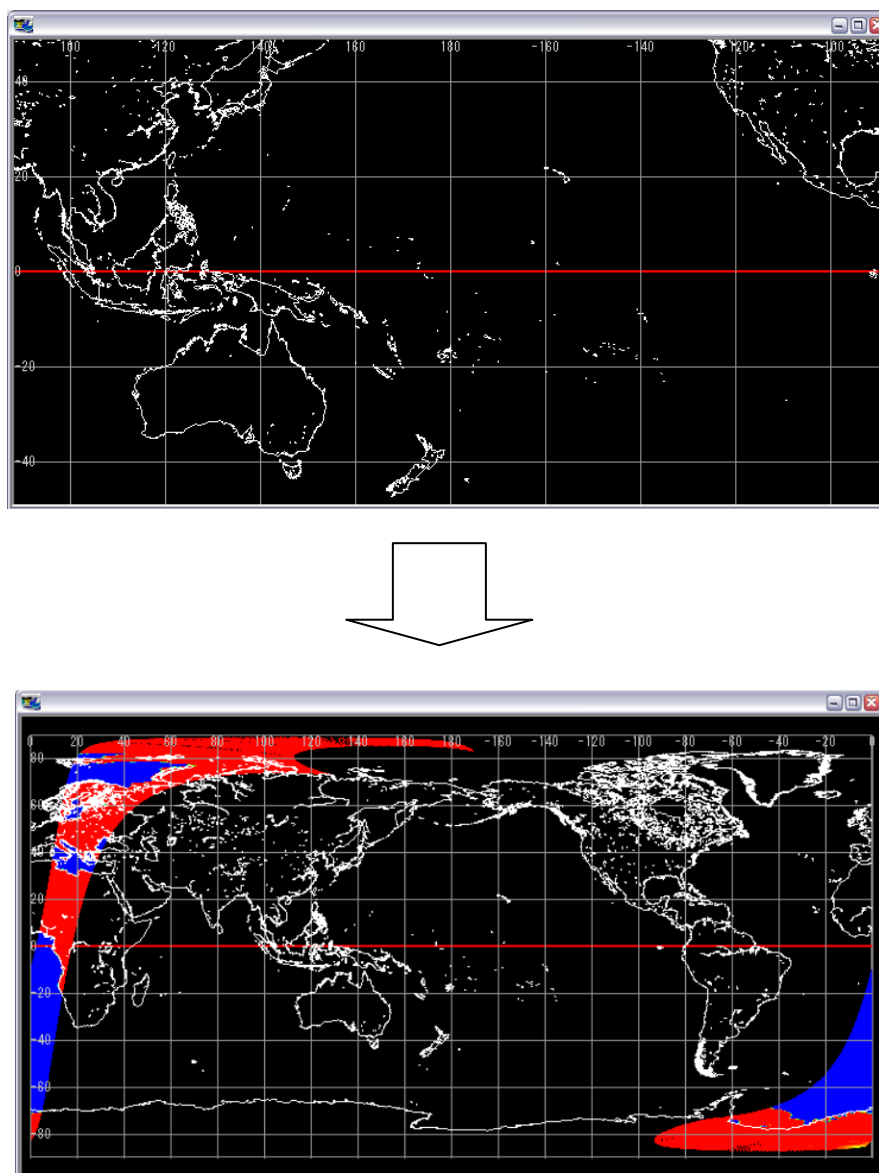
Figure 4.2.4-5 Zoom Out

4.2.4.4. Reset Image Window

If you click this **[Reset Image Window]** icon, the center location of the shown image and/or its zoom ratio is set back to the previous shown image. But the image window size is maintained as the latest.

4.2.4.5. Back to Previous

If you click this **[Reset Image Window]** icon, the center location of the shown image and/or its zoom ratio is set back to the previous shown image. But the image window size is maintained as the latest.

4.2.5. Map Projection

If you click this **[Map Projection]** menu, the projective technique of a map can be specified. There are four sub menus in a file open menu.

(1) Equidistant Geographic
(2) Orthographic
(3) Polar Stereo Geographic
(4) Mercator Geographic

Sub menus are shown in Fig. 4.2.5-1.

Figure 4.2.5-1 [Map Projection] sub menu

This menu corresponds to the following icons of a tool bar. The tool bar icon corresponding to a sub menu is shown in Fig. 4.2.5-2.

Figure 4.2.5-2 [Map Projection] menu and Tool Bar

Please refer [1.3 Object data] about the map projection of AMSR/AMSR-E/GLI and TRMM product.

4.2.5.1. Equidistant Geographic

If you click this **[Equidistant Geographic]** menu, an image can be displayed by Equidistant Projection. A sample is shown in Fig. 4.2.5-3.
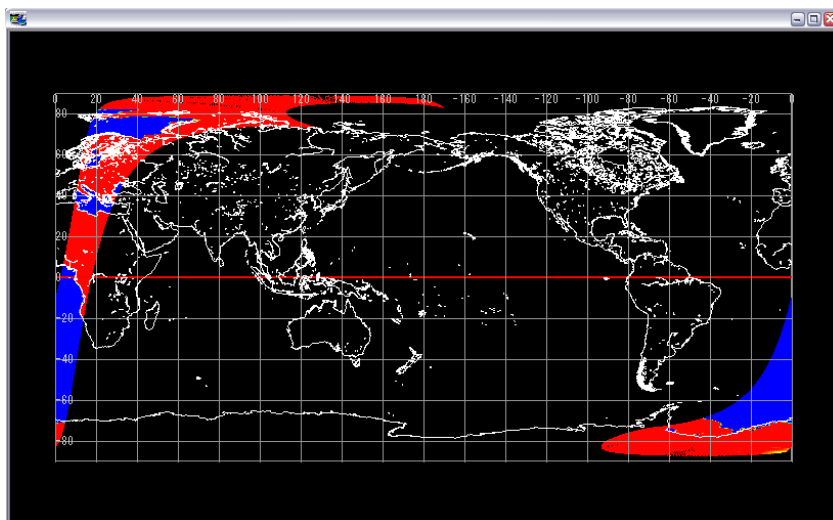
Figure 4.2.5-3 A Sample Image of Equidistant Geographic

4.2.5.2. Orthographic

If you click this **[Orthographic]** menu, an image can be displayed by Orthographic Projection. A sample is shown in Fig. 4.2.5-4.
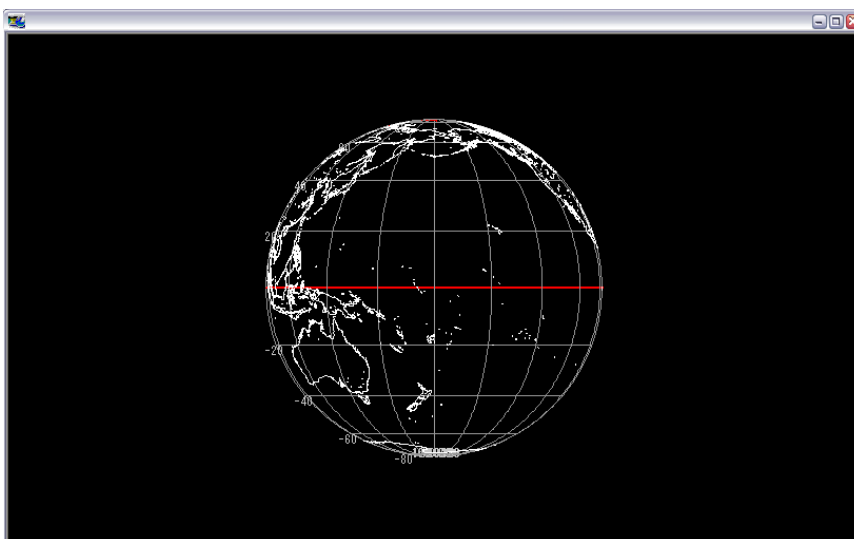
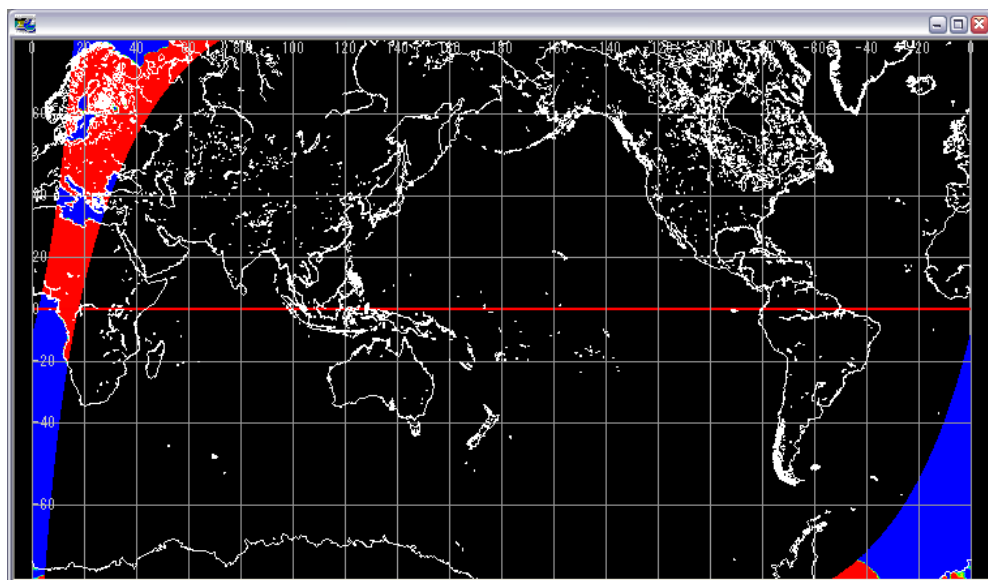Figure 4.2.5-4 A Sample Image of Orthographic

4.2.5.3. Polar Stereo Geographic

If you click this **[Polar Stereo Geographic]** menu, an image can be displayed of Polar Stereo Geographic Projection. There are two sub menus in a file open menu.

(1) Northern Hemisphere
(2) Southern Hemisphere

Sub menus are shown in Fig. 4.2.5-5.
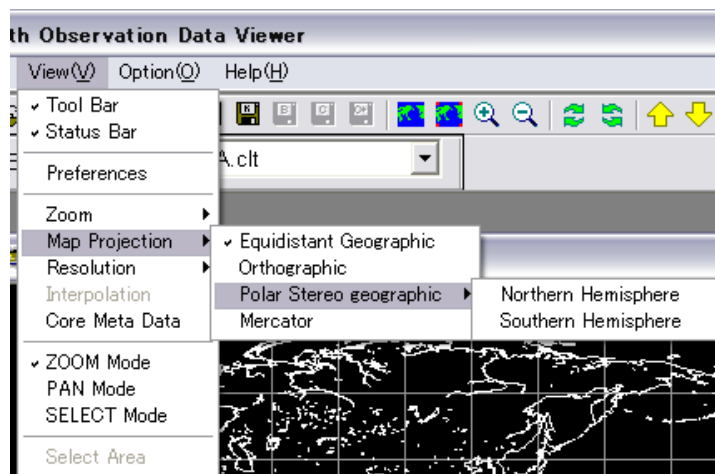
Figure 4.2.5-5 [Polar Stereo Geographic] sub menu

1) Northern Hemisphere

If you click this **[Northern Hemisphere]** icon, an image of Northern Hemisphere can be displayed of Polar stereo Projection. A sample is shown in Fig. 4.2.5-6.
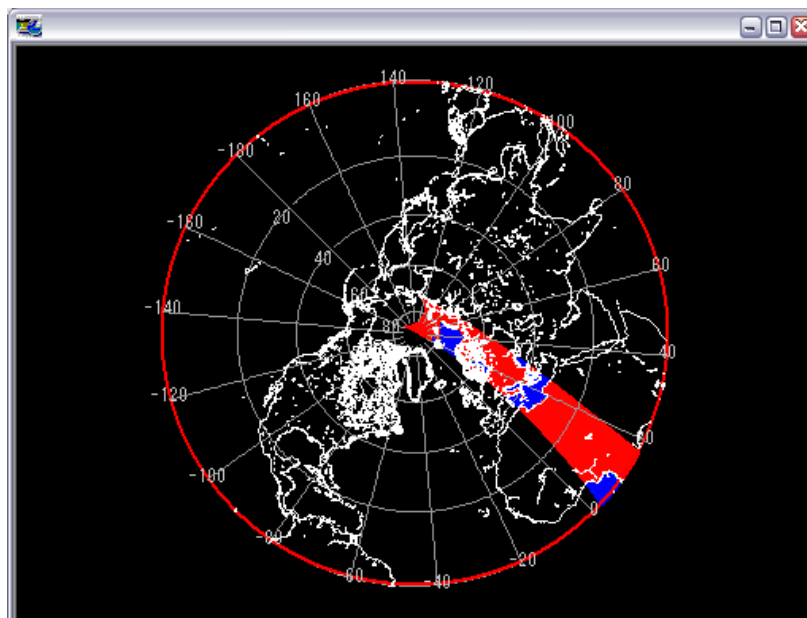
Figure 4.2.5-6 A Sample Image of Northern Hemisphere

2) Southern Hemisphere
If you click this **[Southern Hemisphere]** icon, an image of Southern Hemisphere can be displayed of Polar stereo Projection. A sample is shown in Fig. 4.2.5-7.
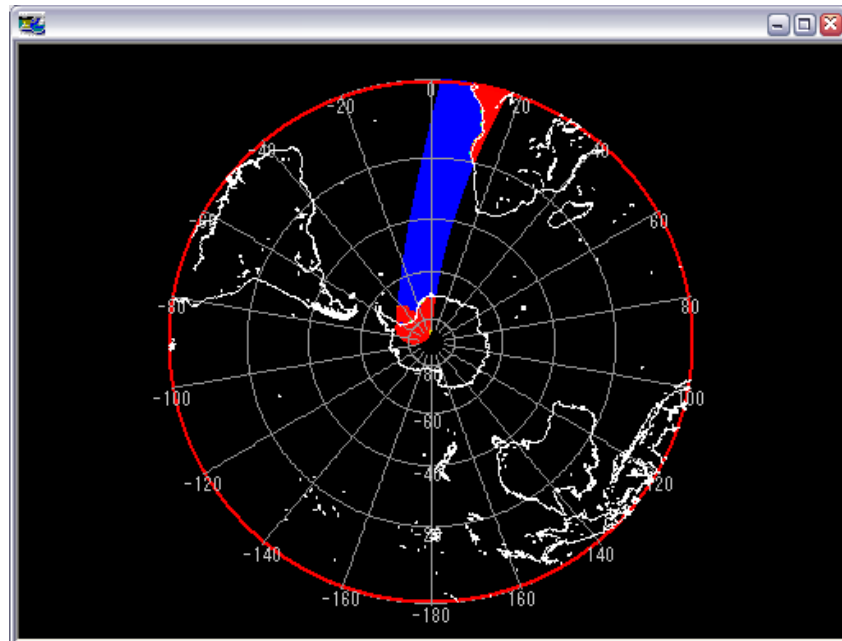
Figure 4.2.5-7 A Sample Image of Southern Hemisphere

4.2.5.4. Mercator Geographic

If you click this **[Mercator Geographic]** icon, an image can be displayed of Mercator Geographic Projection. A sample is shown in Fig. 4.2.5-8.

Figure 4.2.5-8 A Sample Image of Mercator Geographic

4.2.6. Resolution

If you click this **[Resolution]** menu, the resolution of the picture to display can be specified. There are five sub menus in a file open menu.

    (1)   Original
    (2)   0.01 deg Mesh
    (3)   0.05 deg Mesh
    (4)   0.10 deg Mesh
    (5)   0.25 deg Mesh

Sub menus are shown in Fig. 4.2.6-1.
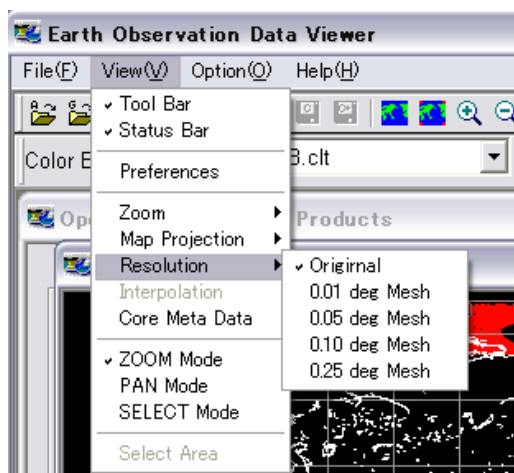
Figure 4.2.6-1 [Resolution] sub menu

4.2.6.1. Original

If you click this **[Original]** sub menu, a picture is displayed by original resolution. A sample is shown in Fig. 4.2.6-2.
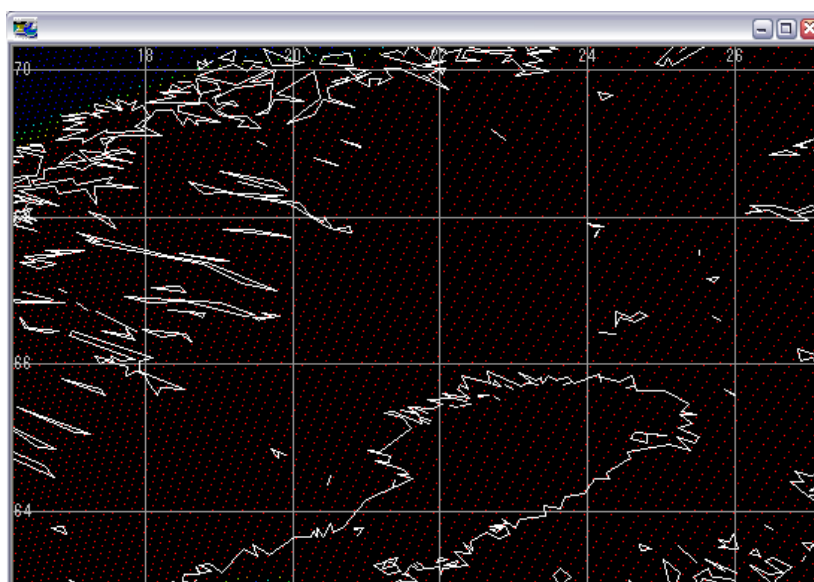
Figure 4.2.6-2 A Sample Image of Original Resolution

4.2.6.2. 0.01 deg Mesh

If you click this **[0.01 deg Mesh]** sub menu, a picture is displayed by 0.01 Degree Mesh Resolution. A sample is shown in Fig. 4.2.6-3.
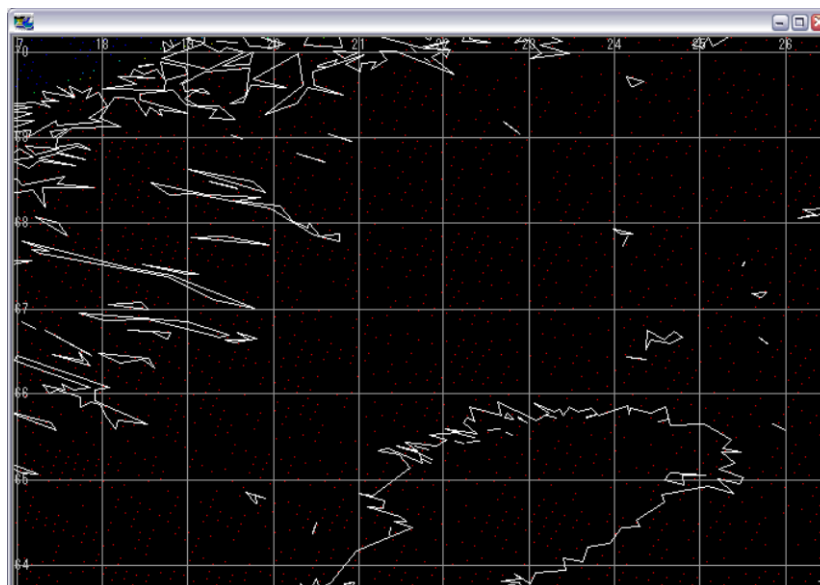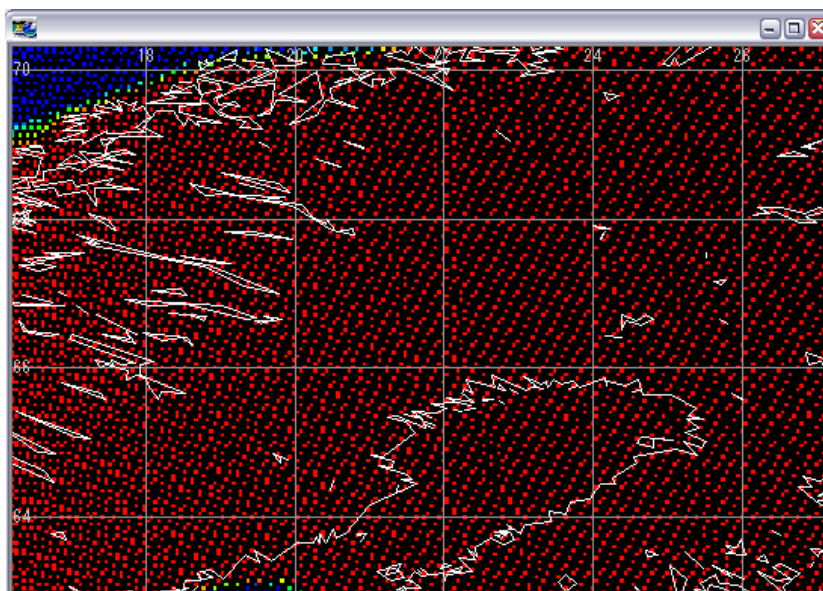

Figure 4.2.6-3 A Sample Image of 0.01 Degree Mesh Resolution

4.2.6.3. 0.05 deg Mesh

If you click this **[0.05 deg Mesh]** sub menu, a picture is displayed by 0.05 Degree Mesh Resolution. A sample is shown in Fig. 4.2.6-4.
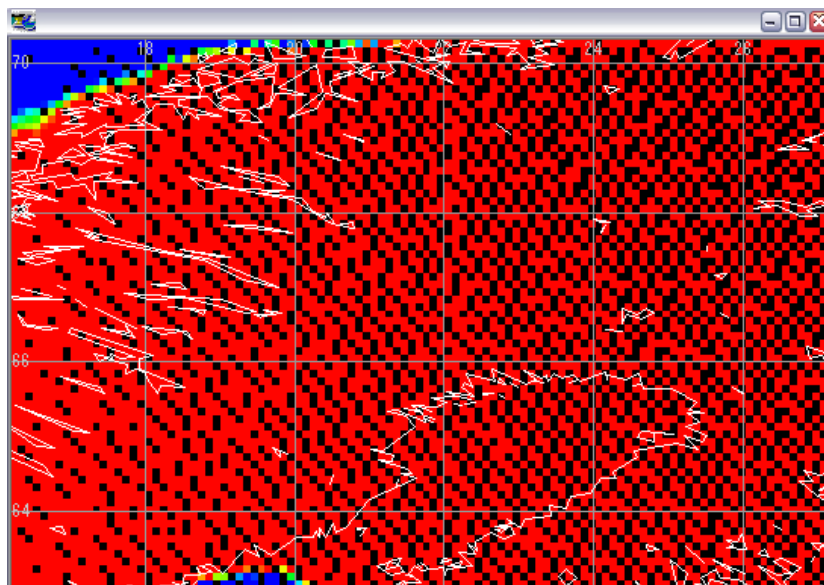

Figure 4.2.6-4 A Sample Image of 0.05 Degree Mesh Resolution

4.2.6.4. 0.10 deg Mesh

If you click this **[0.10 deg Mesh]** sub menu, a picture is displayed by 0.10 Degree Mesh Resolution. A sample is shown in Fig. 4.2.6-5.

Figure 4.2.6-5 A Sample Image of 0.10 Degree Mesh Resolution

4.2.6.5. 0.25 deg Mesh

If you click this **[0.25 deg Mesh]** sub menu, a picture is displayed by 0.25 Degree Mesh Resolution. A sample is shown in Fig. 4.2.6-6.
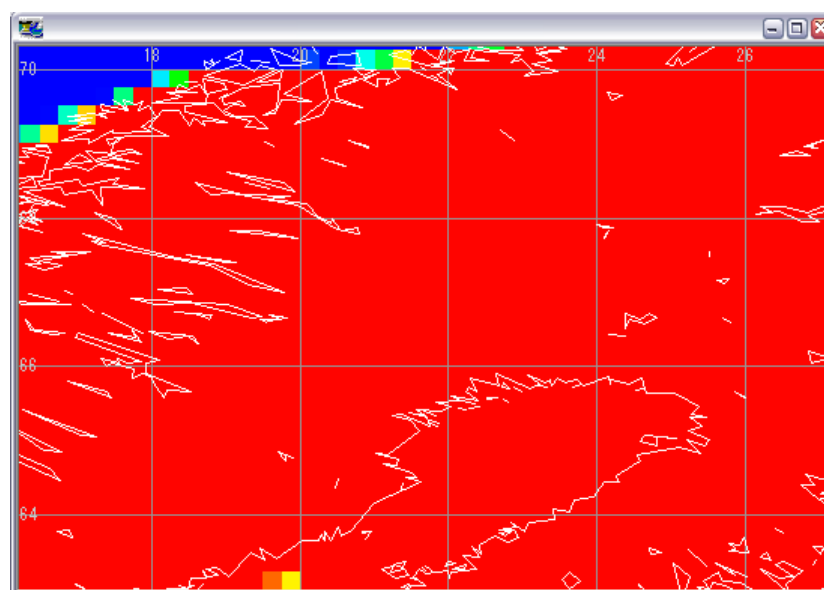

Figure 4.2.6-6 A Sample Image of 0.10 Degree Mesh Resolution

4.2.7. Interpolation

If you zoom up your specified concerning area, some mesh points will be not color pained but in black. In this situation, you click this **[Interpolation]** menu, I can make smooth indication image. If you click this menu once again, I can return to the original indication image. A sample is shown in Fig. 4.2.7-1.
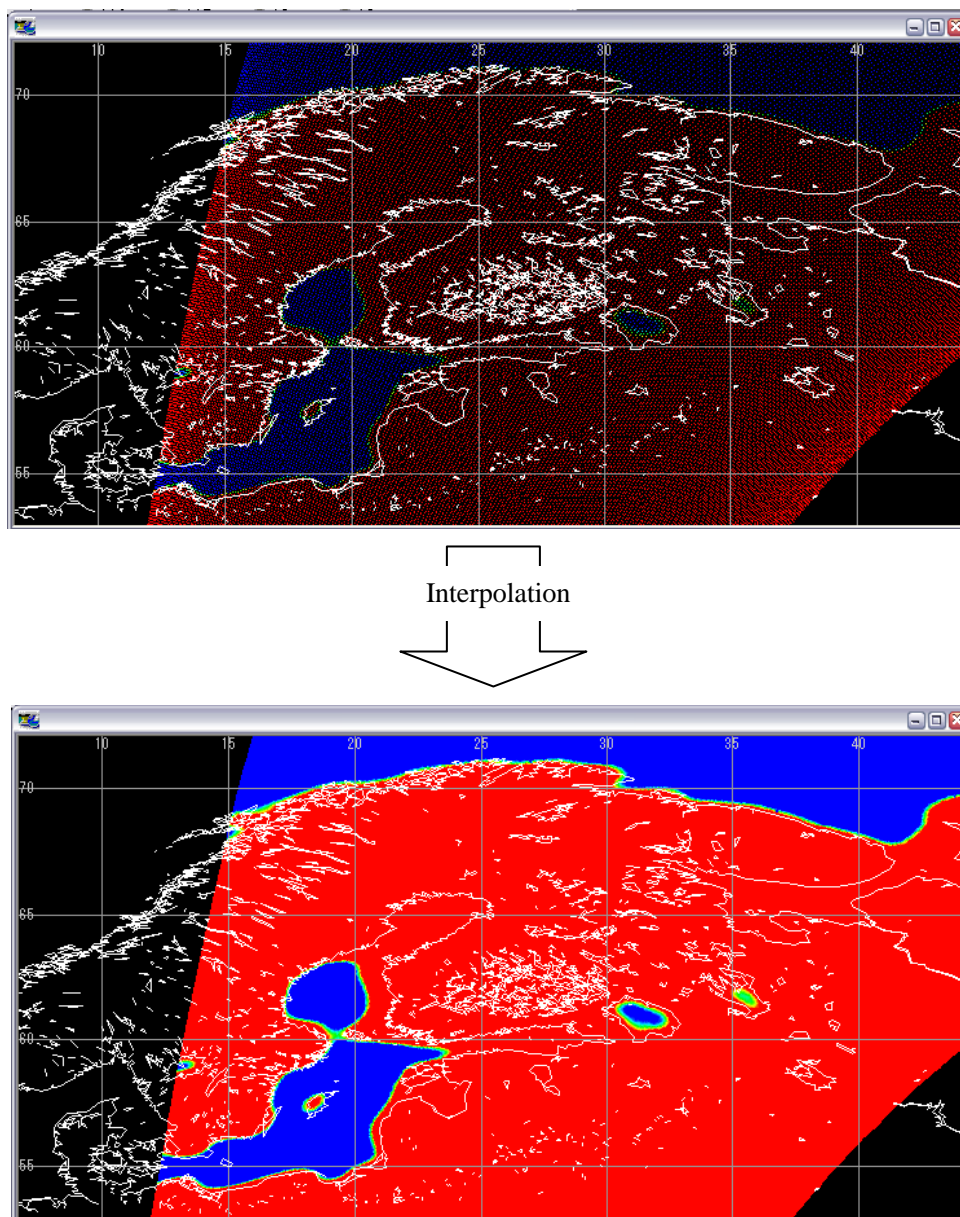

Interpolation

Figure 4.2.7-1 Interpolation

4.2.8. Core Meta Data

   If you click this **[Core Meta Data]** menu, **[Core Meta Information Dialog]** can display, and a Core Meta information is displayed. If you activate an image window and select **[Core Meta Data]** pull down, its **[Core Meta Information Dialog]** with the image window is popped up. **[Core Meta Information Dialog]** layout is shown in Fig. 4.2.8-1.
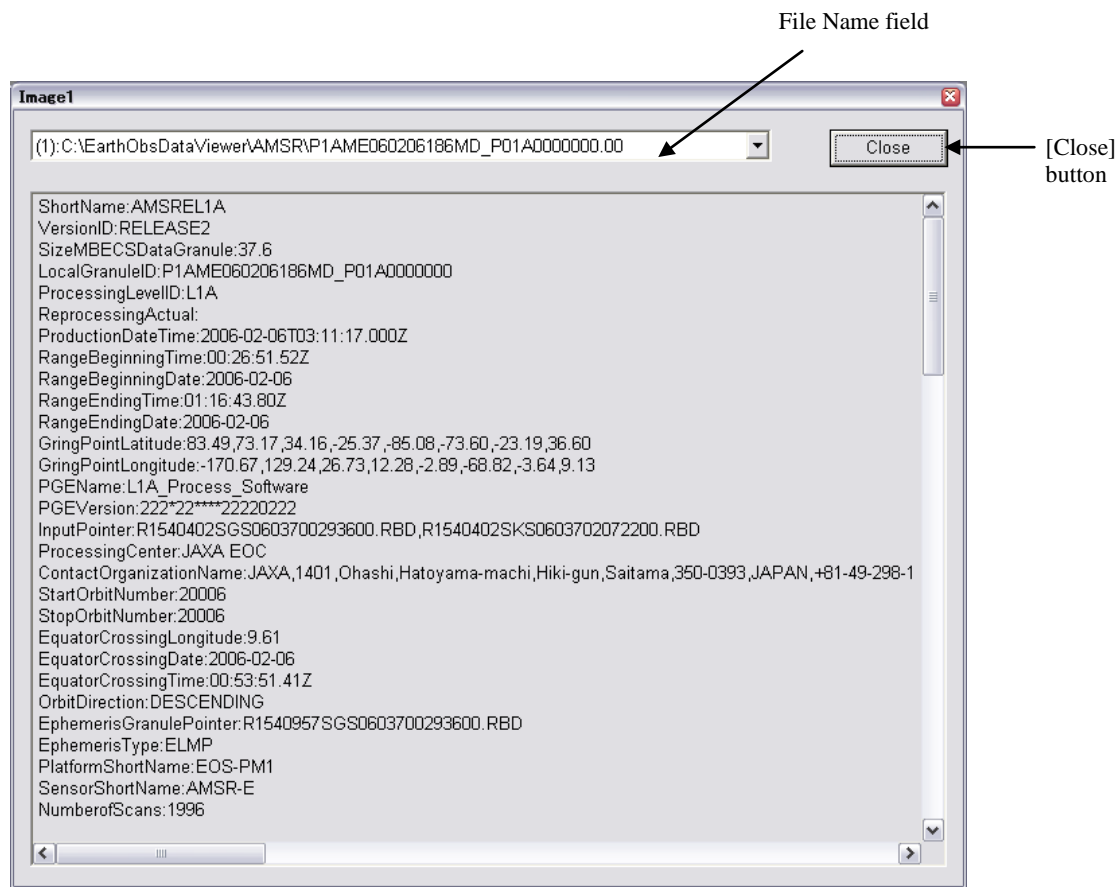
File Name field

Figure 4.2.8-1 Core Meta Information Dialog

■ **[File Name]** field
   Please specify the product file which displays core metadata.

■ **[Close]** button
   If you click this **[Close]** button, dialog is closed.

4.2.9. ZOOM Mode

If you click this **[ZOOM Mode]** menu, you can zoom in specified area on a map. When this mode is chosen, the icon of the tool bar shown in Fig. 4.2.9-1 will be dented.

ZOOM Mode

Figure 4.2.9-1 [Zoom Mode] menu and Tool Bar

A designated method of an area your pushes the left button of a mouse at a start position and moves a mouse to an end position, and separates the left button of a mouse.

If an area is specified, an area definition rectangle as shown in Fig. 4.2.9-2 will be displayed, and an image will be expanded automatically.
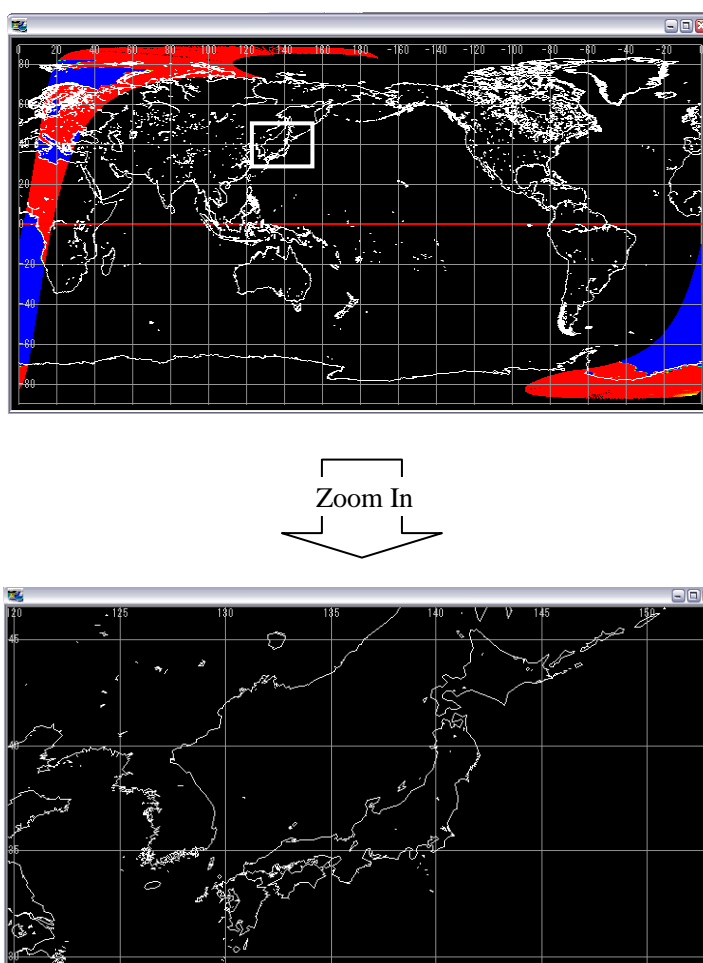

Zoom In

Figure 4.2.9-2 Zoom In Picture

4.2.10. PAN Mode

If you click this **[PAN Mode]** menu, a map is movable vertically and horizontally with a mouse. When this mode is chosen, the icon of the tool bar shown in Fig. 4.2.10-1 will be dented.

PAN Mode

Figure 4.2.10-1 [PAN Mode] menu and Tool Bar

When you move image, the left push button of a mouse, and moves a mouse vertically or horizontally. A mouse pointer becomes the form of a "hand" when this mode is chosen.

4.2.11. SELECT Mode

If you click this **[SELECT Mode]** menu, the area can be specified by mouse. The specified area can be saved to a file as specified format (Image/KML/Binary/CSV). When this mode is chosen, the icon of the tool bar shown in Fig. 4.2.11-1 will be dented.

SELECT Mode

Figure 4.2.11-1 [SELECT Mode] menu and Tool Bar

When you select area, push the left button of a mouse at a start position then moves a mouse to an end position and release the left button of a mouse. If an area is specified, an area definition rectangle as shown in Fig. 4.2.11-2 will be displayed.
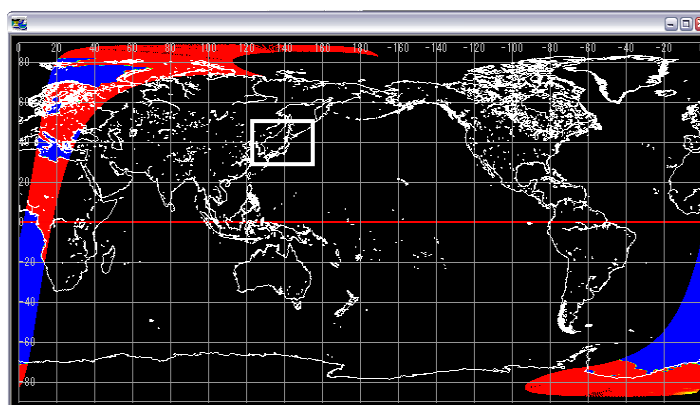

Figure 4.2.11-2 Area Clip

4.2.12. Select Area

If you click this **[Select Area]** menu, **[Selection Area Dialog]** is displayed and a selection domain can be specified at latitude longitude. The specified domain can be outputted to a file in the specified format (Image/KML/Binary/CSV). When this mode is chosen, the icon of the tool bar shown in Fig. 4.2.12-1 will be chosen.
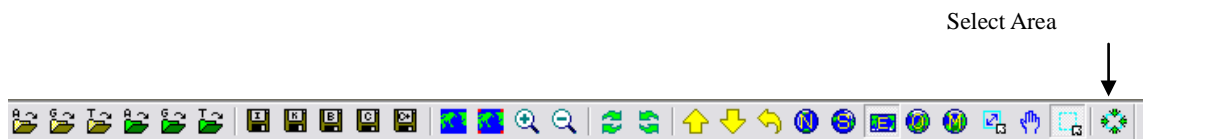
Select Area
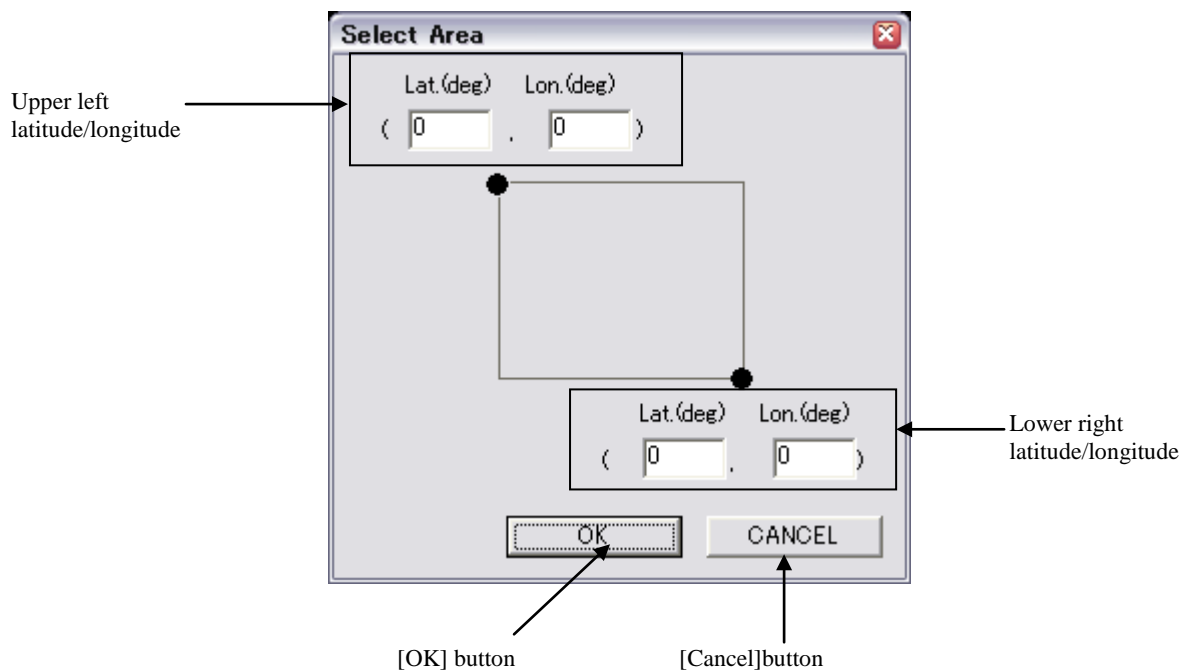
Figure 4.2.12-1 [Map Selection Area] menu and Tool Bar

Figure 4.2.12-2　Selection Area Dialog

■ **[Upper left latitude/longitude]**
The latitude and longitude of the upper left corner of specified area.A unit is degree.

■ **[Lower right latitude/longitude]**
The latitude and longitude of the lower right corner of specified area.A unit is degree.

■ **[OK]** button

If you click this **[OK]** button, displays an area definition rectangle as shown in Fig. 4.2.12-3.

Figure 4.2.12-3 Domain Clip

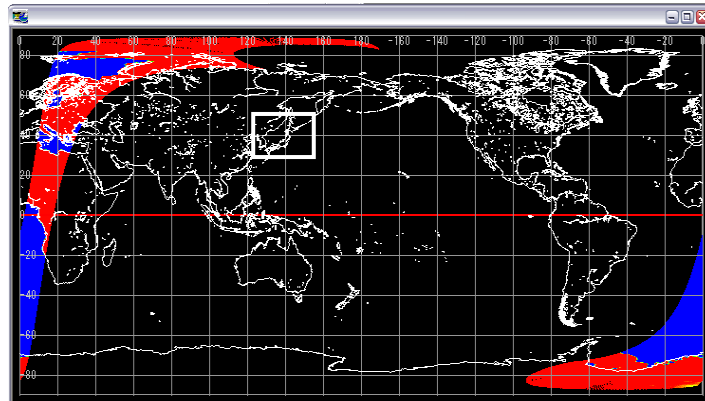■ **[Cancel]** button

All setting shown in the dialog are canceled and the dialog is closed.

4.3. Option Menu

There are five sub menus in an option menu.

(1)   Edit Color Bar Table
(2)   Edit Look Up Table
(3)   Image Output option
(4)   Map Layer
(5)   Position Error Correction

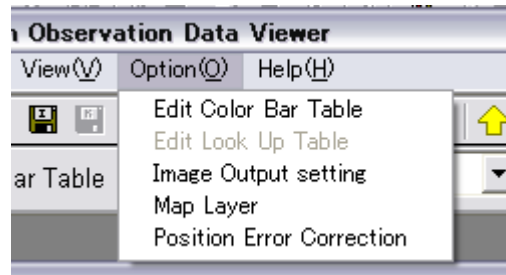A file menu is shown in Fig. 4.3-1, and each menu is explained henceforth.

Figure 4.3-1 Option Menu Pull Down

4.3.1. Edit Color Bar Table

　　If you click this **[Edit Color Bar Table]** menu, **[Color Bar Table Edit Dialog]** can display and new creation and setting change of a color bar table can be made. **[Color Bar Table Edit Dialog]** is shown in Fig. 4.3.1-1.

　　When the "Single channel" image is displayed, this menu is active.

[No of Points] pull down　　　　　[Chg] button　　　　　　　　　　　[Color Bar Title]
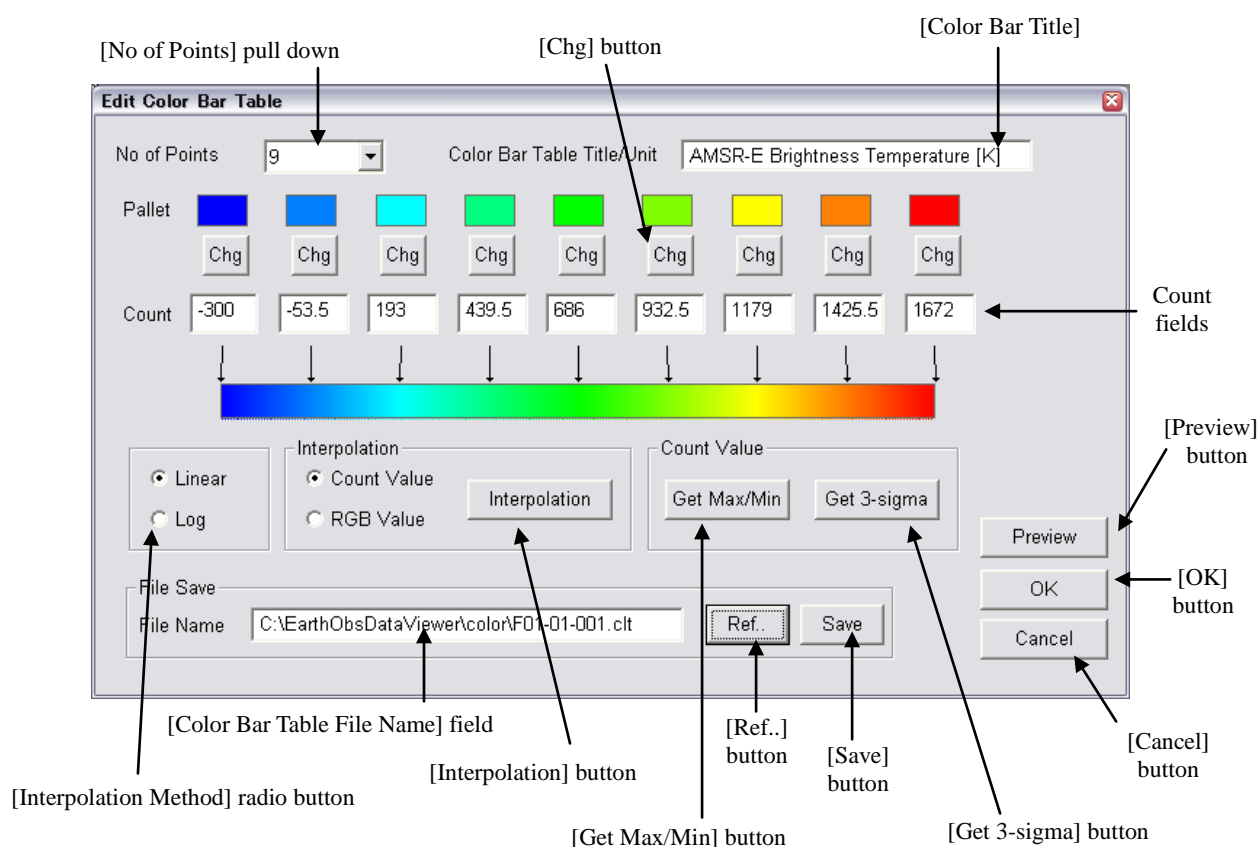
Figure 4.3.1-1 Color Bar Table Edit Dialog

■ **[No of Points]** pull down
　　The number of reference points for count value and color pallet is selectable from two, three, five and nine.

■ **[Color Bar Title]**
　　Please specify the title of a color table. If you describe text here it will be drawn in the image file.

■ **[Chg]** button
　　If you click this **[Chg]** button, then **[Color]** dialog provided by Windows system will be popped up. You can select a color pallet from the basic system color or user defined color. **[Color]** dialog layout is shown in Fig. 4.3.1-4.

Basic System
Color

[Custom Color] pallet

[Define Custom color]
button

[OK] button   [Cancel] button
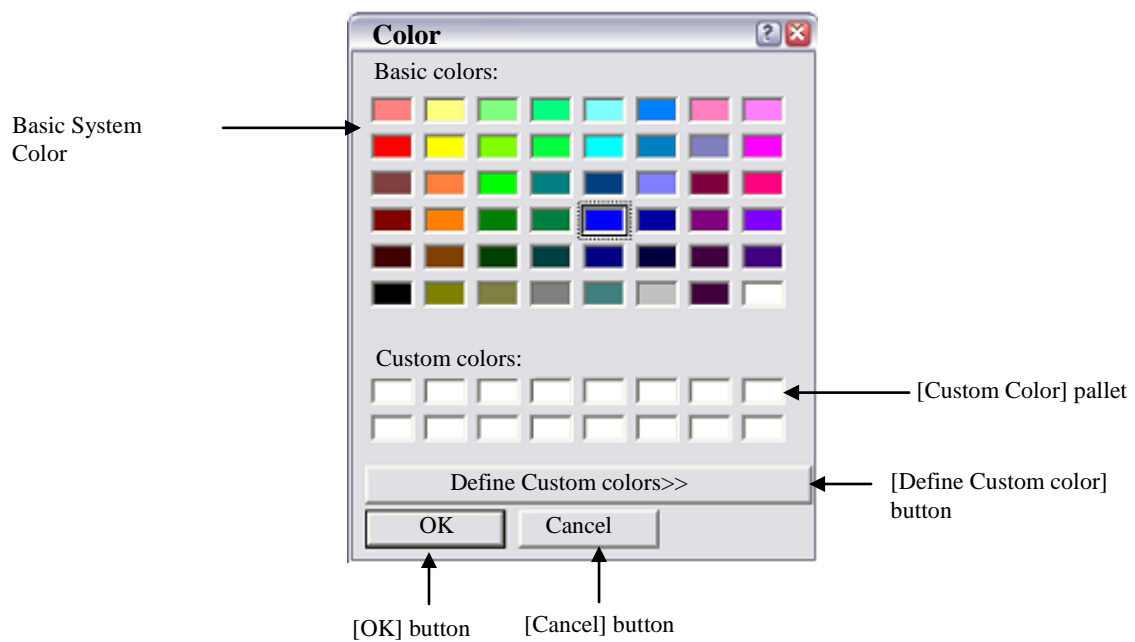
Figure 4.3.1-2 [Color] Dialog

If you want to define new color, please click **[Define Custom Color]** button on **[Color]** dialog. Then the other **[Color]** dialog shown in the Figure 4.3.1-3 will be popped up. After specifying your own color, please click **[Add to Custom Color]** button and **[OK]** button, then it will be added to the color pallet.

Color Pallet   Color select icon

Basic System
Color

Brightness

[Custom Color]
pallet

RGB Cont

[OK] button   [Cancel] button

[Color Solid]   [Add Custom Color]

Figure 4.3.1-3 [Color] Dialog

■ **[Count]** fileds

Please set the counter value for each reference point. Please specify the count value for both edge fields at least. **[Get Max/Min]** and **[Get 3-sigma]** button will help you to get the range of the image data into the fields.

■ **[Interpolation Method]** radio button

This radio button is alternatively selectable to specify the interpolation method. Either Linear or Logarithm interpolation is selectable.

■ **[Interpolation]** button

If you click this **[Interpolation]** button, the count fields except both edges are calculated by the linear or logarithm interpolation. In general sense, the minimum count is left and the maximum for right but you may set the values in reverse. The interpolation is applicable for both cases.

■ **[Get Max/Min]** button

If you click **[Get Max/Min]** button, The Earth Observation Data Viewer evaluates the maximum and minimum count value of the image data and stores them into count fields as the minimum in the left and the maximum in the right.

■ **[Get 3-sigma]** button

If you click **[Get 3-sigma]** button, The Earth Observation Data Viewer evaluates the mean and the standard variation of the image data. The left count is "the mean + 3*sigma" and the right is "the mean - 3*sigma." Here "sigma" represents the standard deviation.

■ **[Color Bar Table File Name]** field

The selected file name for editing or specified file name for saving is shown in this field.

■ **[Ref..]** button

If you click this **[Ref..]** button, then **[Open]** dialog provided by Windows system will be popped up. You can load a Color Bar Table file for editing. **[Open]** dialog layout is shown in Fig. 4.3.1-4.

Figure 4.3.1-4 [Open] dialog

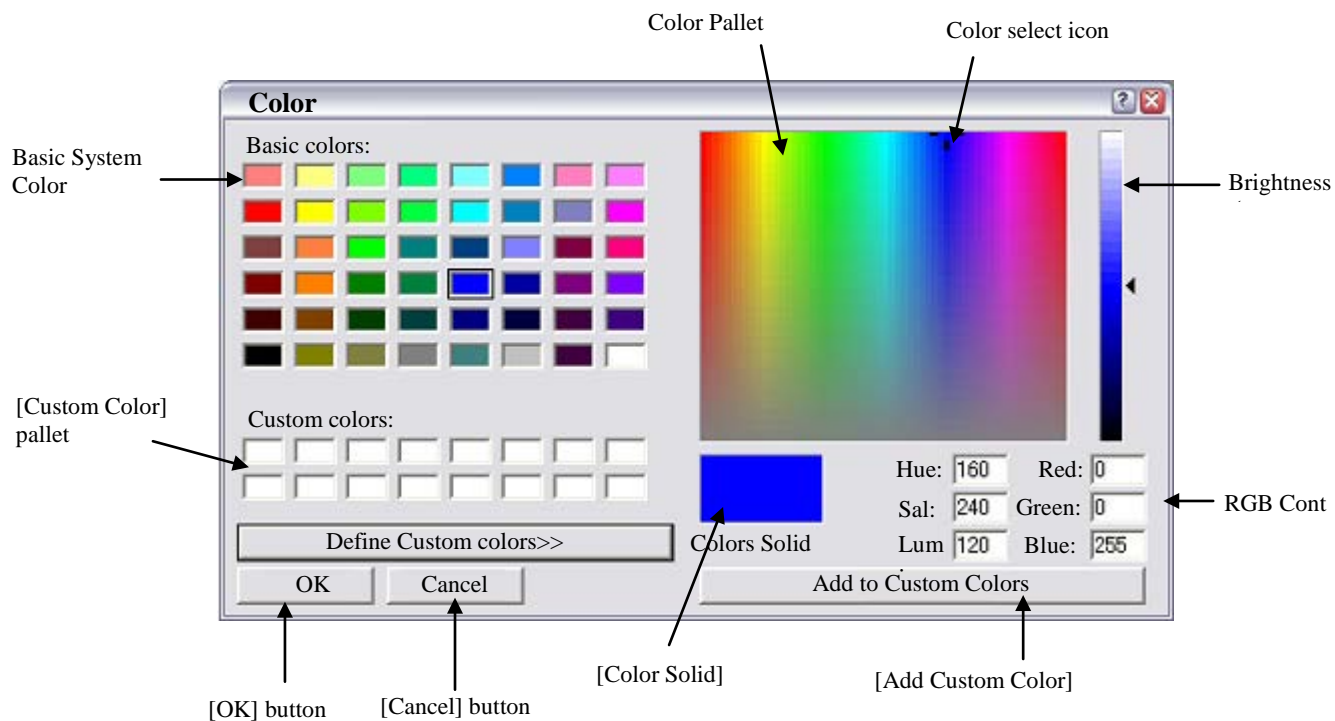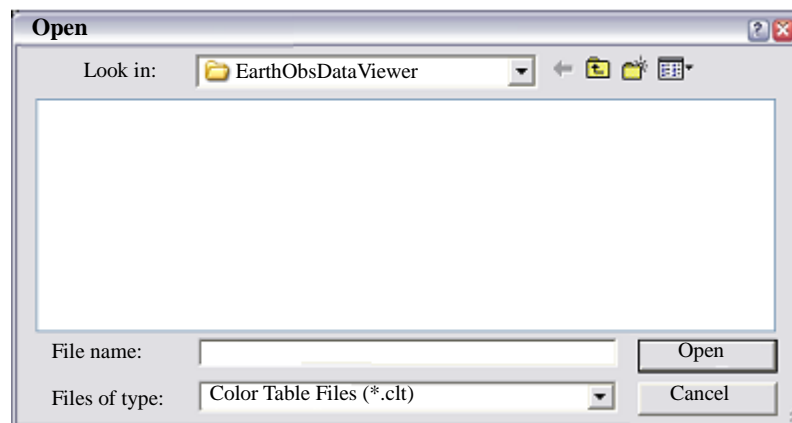■ **[Save]** button

If you click this **[Save]** button, **[Save As]** dialog provided by Windows system will be popped up. You can save the current result as a file with the extension "clt". **[Save As]** dialog layout is shown in Fig. 4.3.1-5.
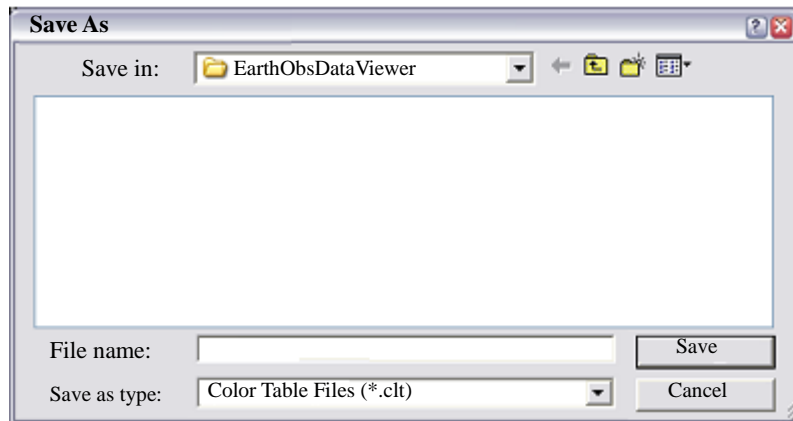

Figure 4.3.1-5 [Save As] dialog

■ **[Preview]** button

If you click **[Preview]** button, the shown image is changed with the currently specified Color Bar Table. You should activate the image window to confirm the processed result image. You may cancel to apply the currently specified Color Bar Table to the data with **[Cancel]** button.

■ **[OK]** button

If you click **[OK]** button on the dialog, the currently specified Color Bar Tables applied to the data shown in the image window and the dialog is dismissed. If you click this **[OK]** button without saving the modified Color Bar Table as a file, the selected Color Bar Table file name shown in **[Color Bar Table]** pull down is blank. If you want to save the modified Color Bar Table, please select **[Edit Color Bar Table]** pull down again before dismissing the image window and perform the Color Bar Table saving procedure.

■ **[Cancel]** button

All settings shown in the dialog are canceled and the dialog is dismissed.

4.3.2. Edit Look Up Table

If you click this **[Edit Look Up Table]** menu, **[Look Up Table Edit Dialog]** can display and new creation and setting change of a color bar table can be made. **[Look Up Table Edit Dialog]** is shown in Fig. 4.3.2-1.

Only in the case of a "RGB composite" picture, this menu can choose.

[N0 of Points] pull down

[Count] field Red Count

[R Count] field

[Count] field Green Count

[G Count] field

[Count] field Blue Count

[B Count] field

[Preview] button

[OK] button

[Look Up Table File Name] field

[Interpolation Method] radio button

[Interpolation] button

[Get Max/Min] button

[Ref..] button

[Save] button

[Get 3-sigma] button

[Cancel] button
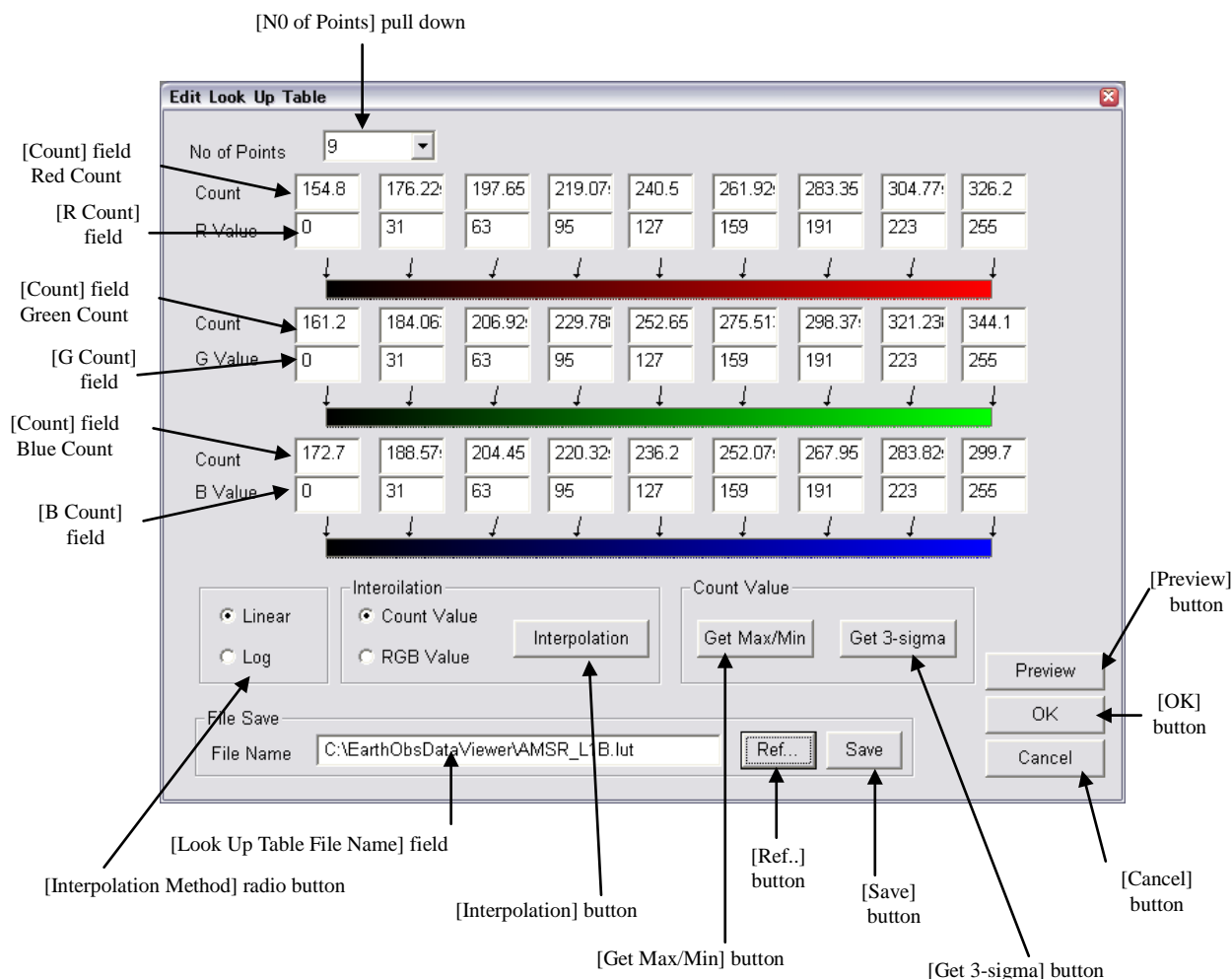
Figure 4.3.2-1 Look Up Table Edit Dialog

■ **[No of Points]** pull down

The number of reference points for count value and color pallet is selectable from two, three, five and nine.

■ **[Count]** fileds

Please set the counter value for each reference point. Please specify the count value for both edge fields at least. **[Get Max/Min]** and **[Get 3-sigma]** button will help you to get the range of the image data into the fields.

■ **[R Count]**, **[G Count]** and **[B Count]** field

Please set a not negative integer up to 255 in each color count field. You can get interpolated value when you click **[Interpolation]** button.

■ **[Interpolation Method]** radio button
    This radio button is alternatively selectable to specify the interpolation method. Either Linear or Logarithm interpolation is selectable.

■ **[Interpolation]** button
    If you click this **[Interpolation]** button, the count fields except both edges are calculated by the linear or logarithm interpolation. In general sense, the minimum count is left and the maximum for right but you may set the values in reverse. The interpolation is applicable for both cases.

■ **[Get Max/Min]** button
    If you click **[Get Max/Min]** button, The Earth Observation Data Viewer evaluates the maximum and minimum count value of the image data and stores them into count fields as the minimum in the left and the maximum in the right.

■ **[Get 3-sigma]** button
    If you click **[Get 3-sigma]** button, The Earth Observation Data Viewer evaluates the mean and the standard variation of the image data. The left count is "the mean + 3*sigma" and the right is "the mean - 3*sigma." Here "sigma" represents the standard deviation.

■ **[Look Up Table File Name]** field
    The selected file name for editing or specified file name for saving is shown in this field.

■ **[Ref..]** button
    If you click this **[Ref..]** button, then **[Open]** dialog provided by Windows system will be popped up. You can load a Color Bar Table file for editing. **[Open]** dialog layout is shown in Fig. 4.3.2-2.
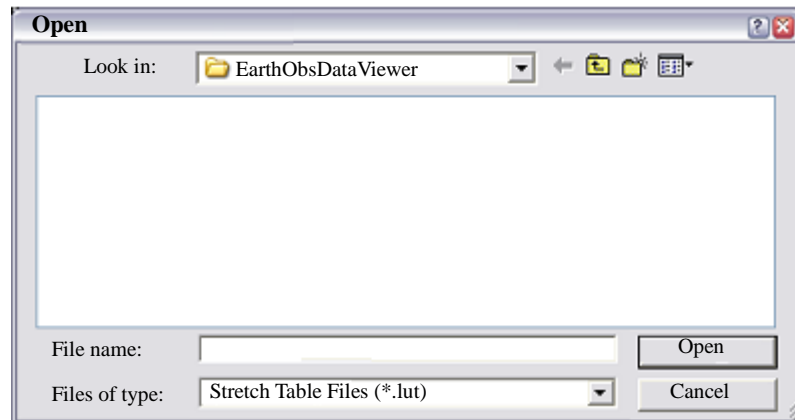

Figure 4.3.2-2 [Open] dialog

■ **[Save]** button

　　If you click this **[Save]** button, **[Save As]** dialog provided by Windows system will be popped up. You can save the current result as a file with the extension "lut". **[Save As]** dialog is shown in Fig. 4.3.2-3.
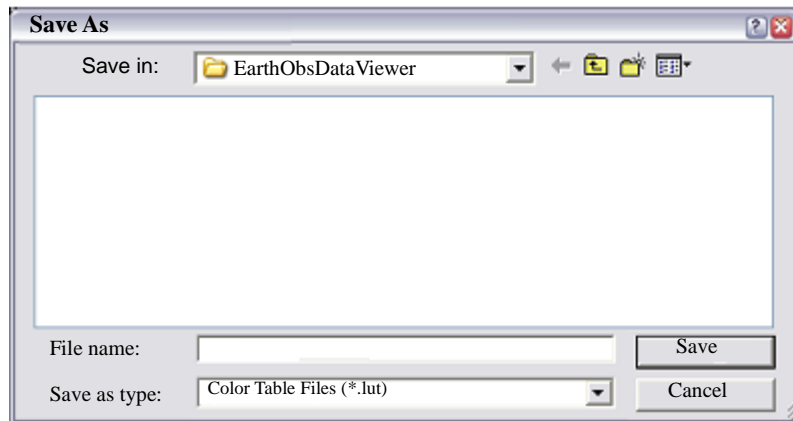
Figure 4.3.2-3 [Save As] dialog

■　**[Preview]** button

　　If you click **[Preview]** button, the shown image is changed with the currently specified Look Up Table. You should activate the image window to confirm the processed result image. You may cancel to apply the currently specified Look Up Table to the data with **[Cancel]** button.

■ **[OK]** button

　　If you click **[OK]** button on the dialog, the currently specified Look Up Table is applied to the data shown in the image window and the dialog is dismissed. If you click this **[OK]** button without saving the modified Look Up Table as a file, the selected Look Up Table file name shown in **[Look Up Table]** pull down is blank.

■ **[Cancel]** button

　　All settings shown in the dialog are canceled and the dialog is dismissed.

4.3.3. Image Output option

If you click this **[Image Output option]** menu, **[Image Output Setting Dialog]** can display and the layout when saving as a Image (TIFF/JPEG/PNG/BMP format) can be set up. **[Image Output Setting Dialog]** is shown in Fig. 4.3.3-1.

[Title On/Off] check box

[Title] field

[Position] radio button

[Color Bar On/Off] check box

[Flip] check box

[Background On/Off] check box

[Select] button

[Background Color] field

[OK] button   [Cancel] button
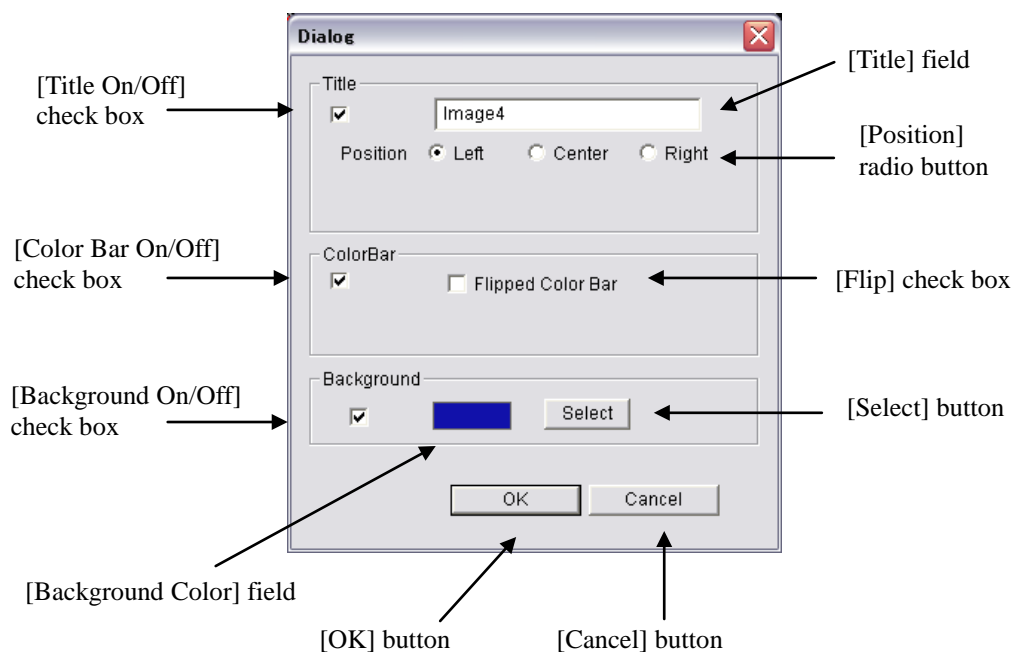
Figure 4.3.3-1 Image Output Setting Dialog

The current image is shown by single channel, color bar option is available, but the current image is shown by RGB composition, color bar option is not available. The difference in a dialog is shown in Fig. 4.3.3-2.
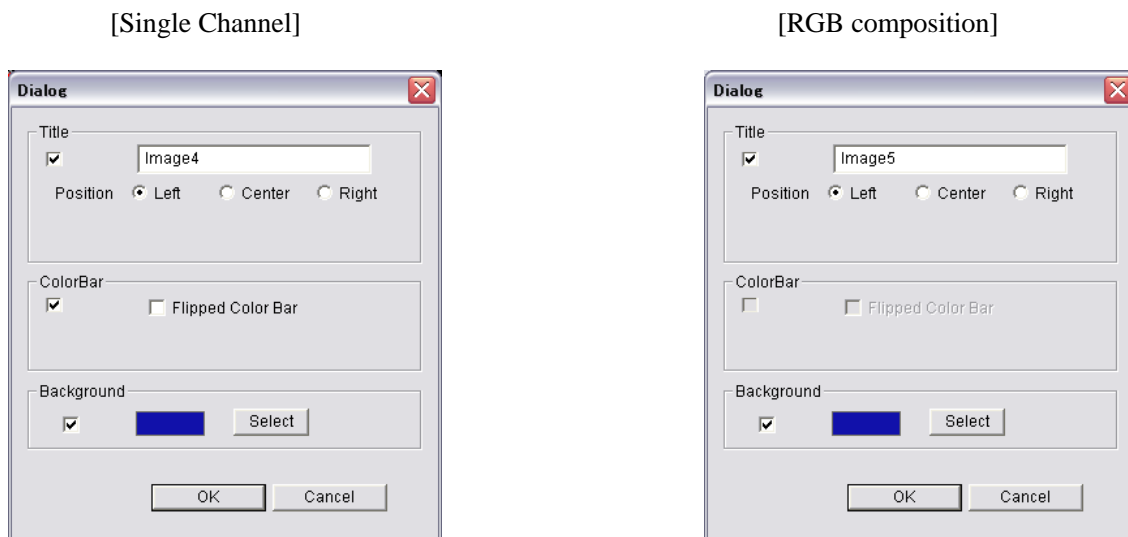
[Single Channel]   [RGB composition]

Figure 4.3.3-2 The difference in a dialog

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■ **[Title On/Off]** check box
  If you mark **[Title]** check box, **[Title Field]** are available.

■ **[Title]** field
  You can insert the text into the image file as a title. Its default is the title text shown in the top flame of this **[Image Window]** dialog which is consistent with your concerning image window for saving. Once you change the title and click **[OK]** button, the title of your concerning image window is also changed.

■ **[Position]** radio button
  You can select position of the title from right, center and left aligned with radio button.

[left]
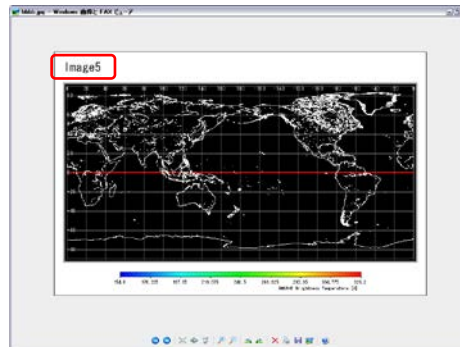
Figure 4.3.3-3 Image sample of the title position "left"

[center]
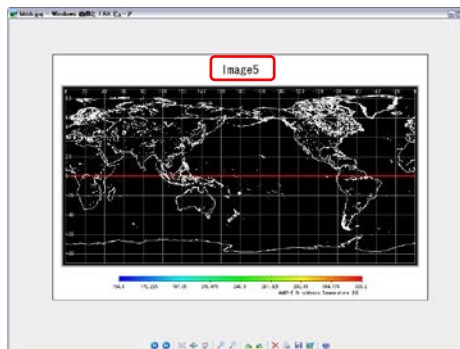
Figure 4.3.3-4 Image sample of the title position "center"

[right]
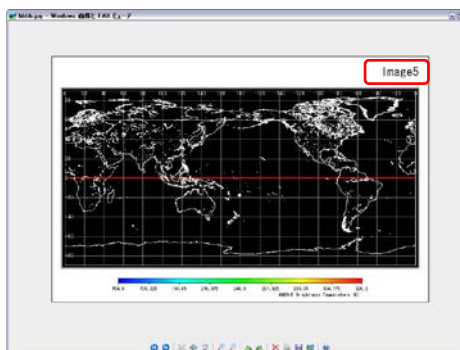
Figure 4.3.3-5 Image sample of the title position "right"

■ **[Color Bar On]/ [Color Bar Off]** radio button

For a Single channel image, you can insert the Color Bar into the image file with this radio button.

This function also reflects the Color Bar on the image window.
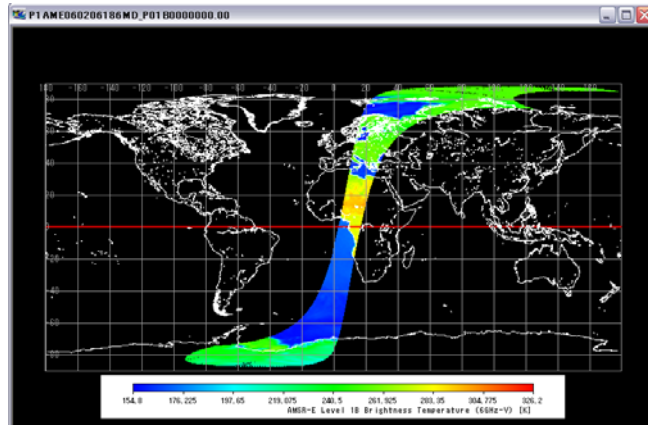
Figure 4.3.3-6 Image window with a Color Bar
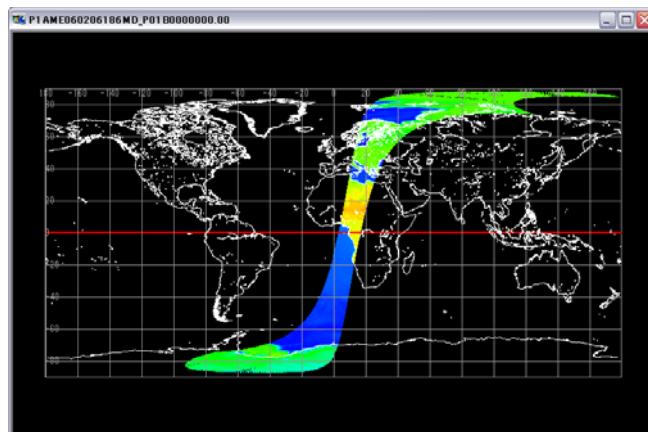
Figure 4.3.3-7 Image window without a Color Bar

■ **[Flip]** check box

If you want to insert a flipped Color Bar into the image file, please mark this check box.

[Un-choosing]

SMALL ⟶ BIG
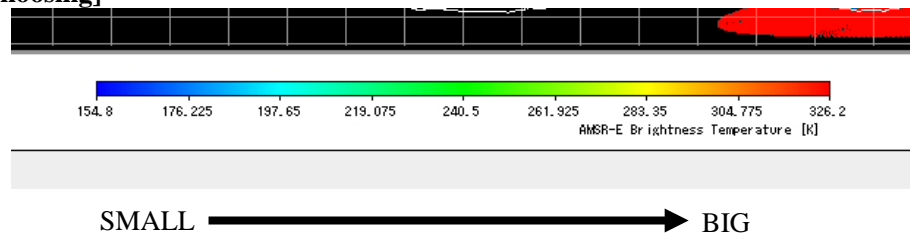
Figure 4.3.3-8 Sample of a not flipped color bar

[Choosing]

BIG ⟶ SMALL
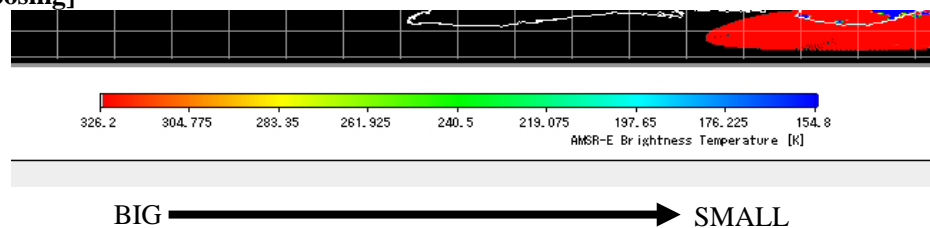
Figure 4.3.3-9 Sample of a flipped color bar

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■ **[Background On/Off]** check box

  If you want to change the background color, please mark this check box, and select the color pallet from the basic system color or user defined color.

[Un-choosing]
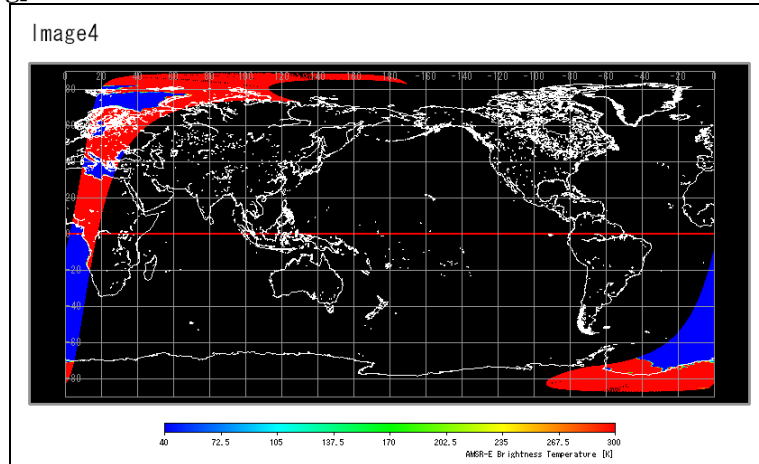
Figure 4.3.3-10 Image sample with background color not changed

[Choosing]
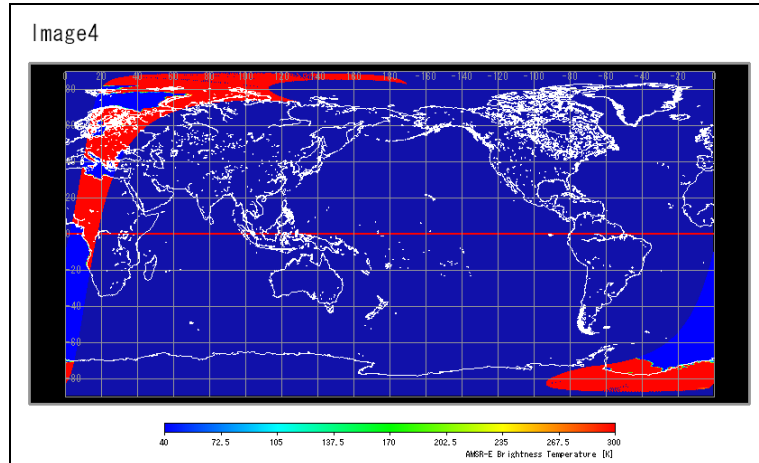
Figure 4.3.3-11 Image sample with background color changed

■ **[Select]** button

  If you click the **[Select]** button, then the [color] dialog is displayed, and you can select the color assignment of the background.

■ **[OK]** button

  If you click **[OK]** button on the dialog, all information on this dialog is saved and the dialog is dismissed.

■ **[Cancel]** button

  All setting shown in the dialog are canceled and the dialog is dismissed.

4.3.4. Map Layer

If you click this **[Map Layer]** menu, **[Map layer Edit Dialog]** can display and you can select the drawing color of coastal lines, latitude / longitude lines and the equator for each image window. **[Map layer Edit Dialog]** is shown in Fig. 4.3.4-1.
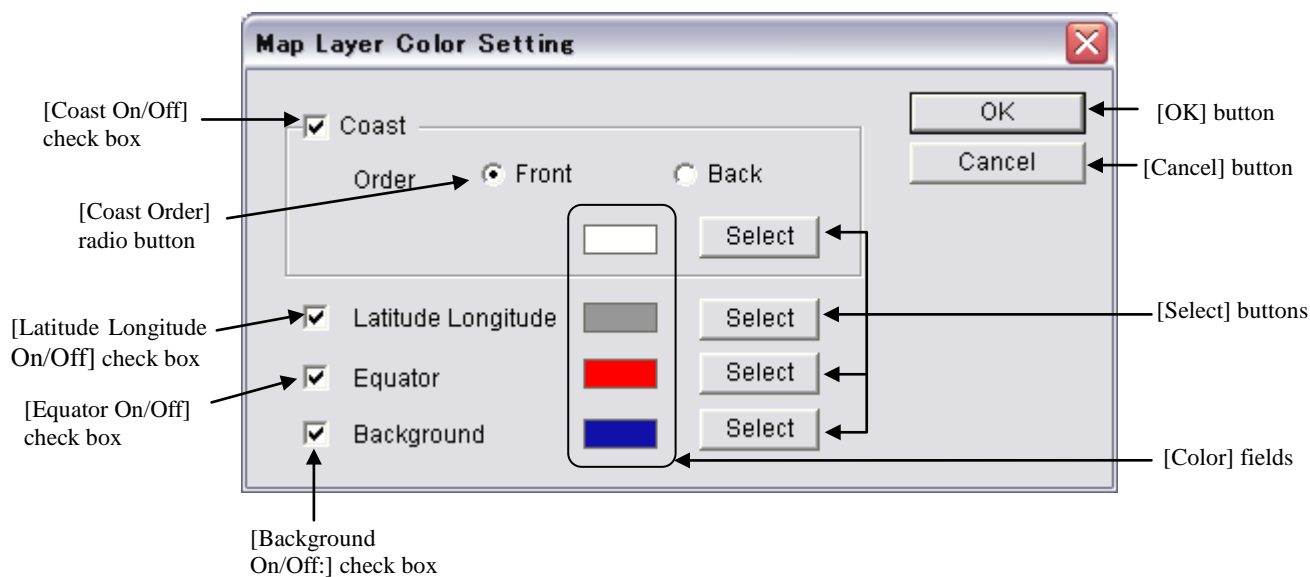
Figure 4.3.4-1 Map layer Edit

■ **[Coast On/Off]** check box
If you mark **[Coast On/Off]** check box, the coast lines are displayed on this window.

■ **[Coast Order]** radio button
You can specify coastline to display whether in front of or at the back of data.

[Front]
All coastlines are displayed.
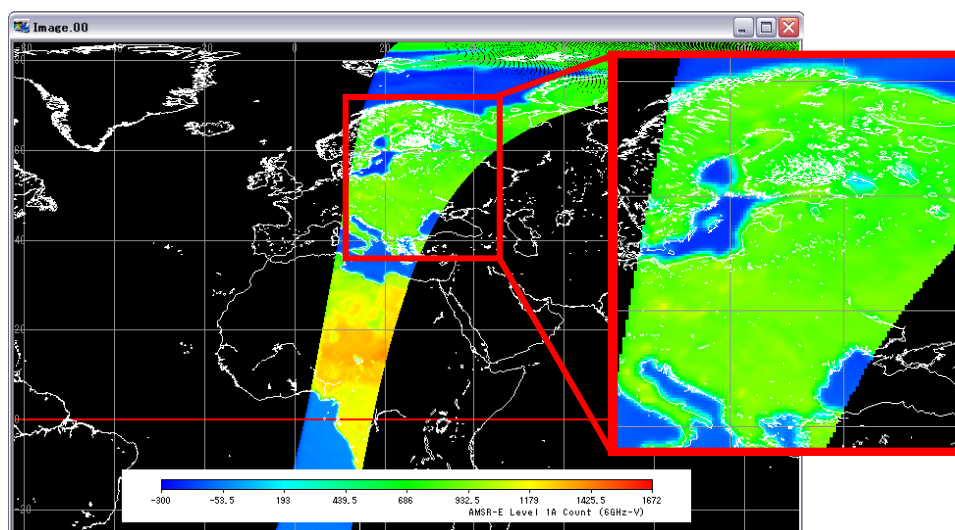
Figure 4.3.4-2 Example of displaying the coastline on the front side of the data

[Back]
A part of the coastline is hidden by displayed data.
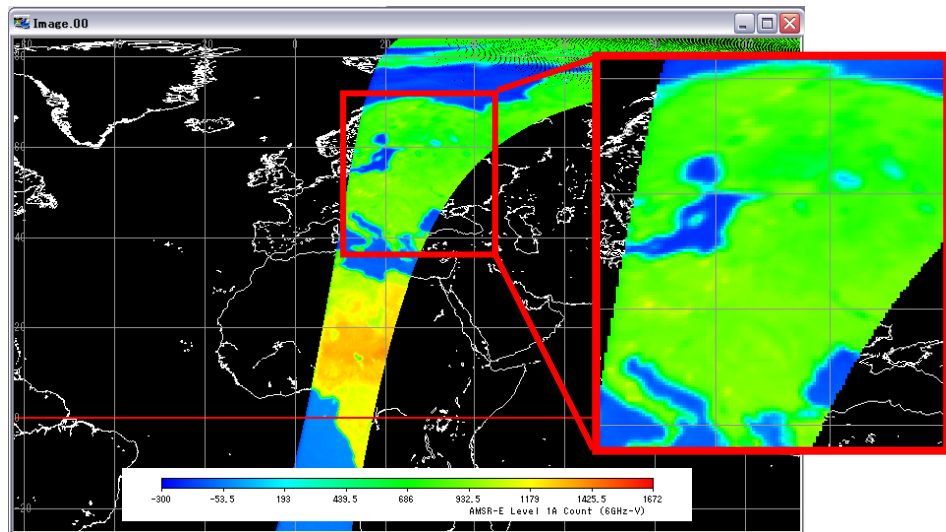
Figure 4.3.4-3 Example of displaying the coastline on the back of the data

■ **[Latitude Longitude On/Off]** check box

If you mark **[Latitude Longitude On/Off]** check box, the latitude / longitude lines are displayed on this window.

■ **[Equator On/Off]** check box

If you mark [Equator On/Off] check box, the quator lines are displayed on this window.

■ **[Background On/Off]** check box

If you mark [Background On/Off] chech box, the background color is changed it to the selected color. Default color of the background is "Black".

■ **[Select]** buttons

If you click the **[Select]** button, then the [color] dialog is displayed, and you can select the color assignment of the background.

■ **[OK]** button

If you click **[OK]** button on the dialog, the image window will be draw a gain with the selected color.

■ **[Cancel]** button

All setting shown in the dialog are canceled and the dialog is dismissed.

4.3.5. Position Error Correction

If you click this **[Position Error Correction]** menu, the viewer read a relative registration parameter every frequency stored away by coremeta data and revises observation point latitude longitude information and can display data to a map indication screen.

The viewer cannot use this menu by Level2 and Level3 data of AMSR/AMSR-E.

4.4. Help Menu

There are four sub menus in an option menu.

    (1)   Help
    (2)   Related link
    (3)   FAQ
    (4)   Version Information

A file menu is shown in Fig. 4.4-1, and each menu is explained henceforth.
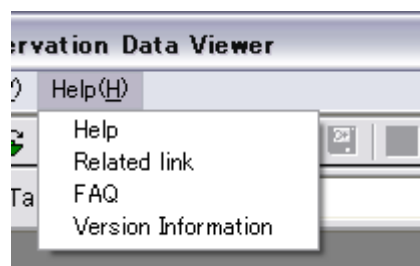
Figure 4.4-1 Help Menu Pull Down

4.4.1. Help

If you click this **[Help]** menu, a help is displayed on a Browser. Help window format is shown in Fig. 4.4-2.
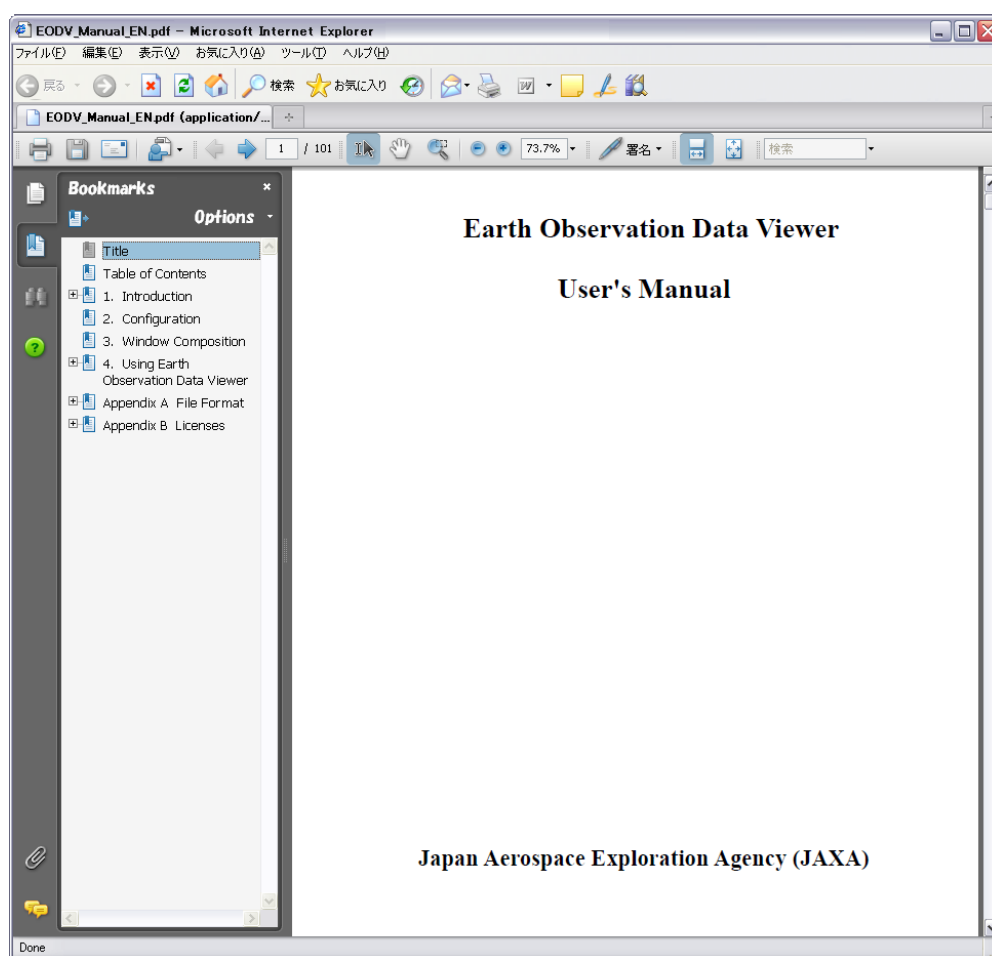
Figure 4.4-2 Help Window

4.4.2. Related link

If you click this **[Related link]** menu, HTML file that has the links of useful web site about AMSR/AMSR-E/GLI is displayed on a browser. Related link window format is shown in Fig. 4.4-3.
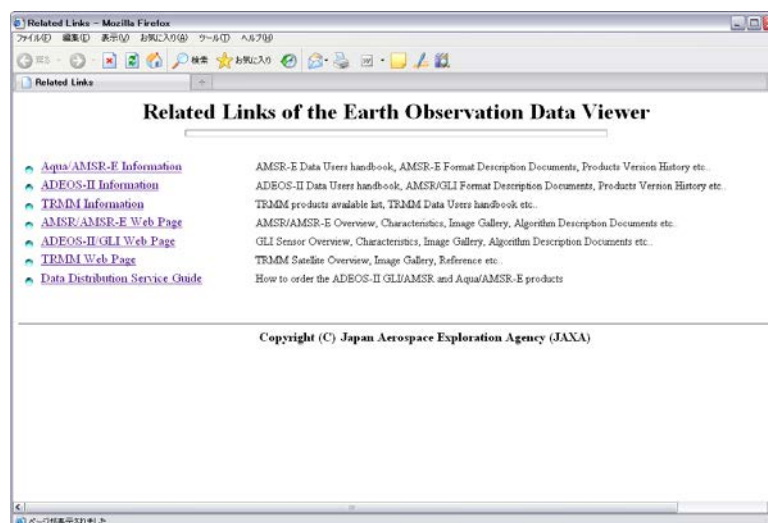
Figure 4.4-3 Link Window

4.4.3. FAQ

If you click this **[FAQ]** menu, FAQs is displayed on a browser. FAQ Window is shown in Fig.4.4-4.
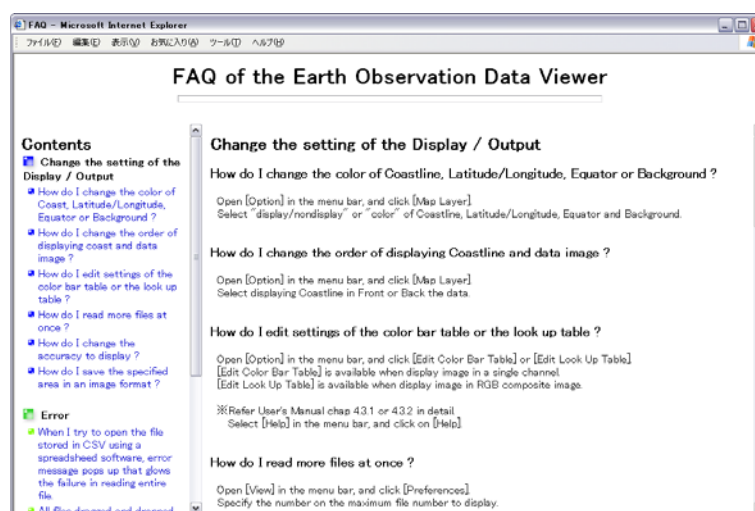
Figure 4.4-4 FAQ Window

4.4.4. Version Information

If you click this **[Version Information]** menu, **[Version Dialog]** can be. **[Version Dialog]** is shown in Fig. 4.4-5.
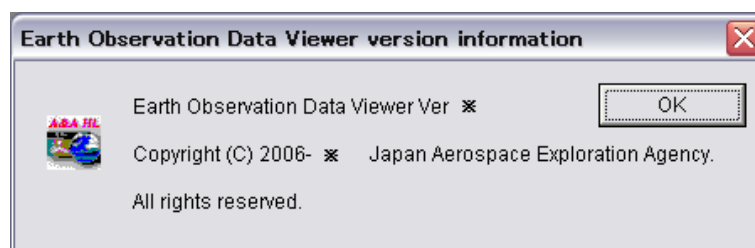
Figure 4.4-5 Version Dialog   ＊Description of latest information

Appendix A File Format
Appendix A.1   Binary File Format
   This file is created when saved by **[Save Binay Format]** of **[File]** menu. The format of the binary file which Earth Observation Data Viewer outputs is shown in Fig. A.1-1.
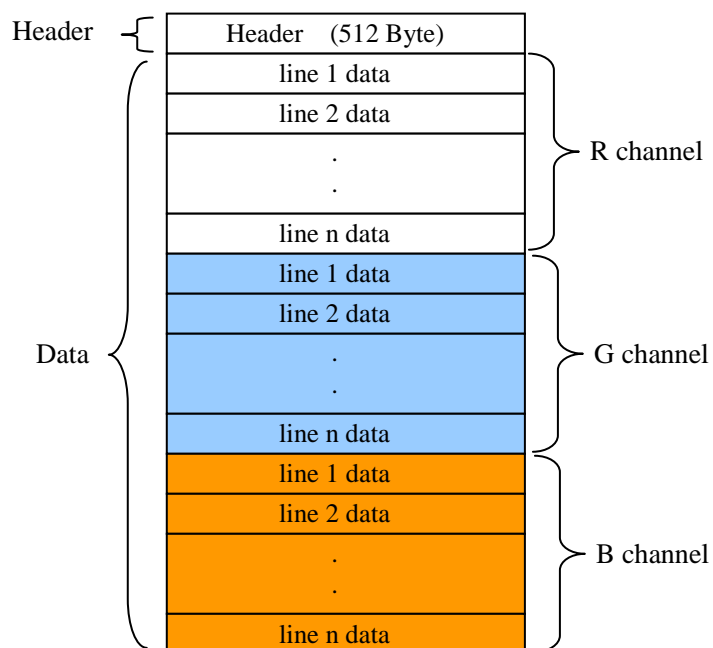
Figure A.1-1 Binary File Format

   A binary file consists of a header record and data records.
        Header：Detailed information on observation data
        Data   : The observation data for several channel is stored in BSQ format.

1) Header Format
   The format of a header is shown in Table A.1-1.

Table A.1-1 Header Format

No.	Item	Description	Note
1	Satellite/ Sensor	Satellite name and sensor name. * AMSR-E: Aqua/AMSR-E * AMSR: ADEOS-II/AMSR * GLI: ADEOS-II/GLI * TRMM/PR: TRMM/PR * TRMM/TMI: TRMM/TMI * TRMM/VIRS: TRMM/VIRS * TRMM/Combined: TRMM	
2	Pixel	The number of pixels (observation mark).	
3	Line	The number of lines.	
4	Upper Left latitude(*1)	Upper left latitude	
5	Upper Left longitude(*2)	Upper left longitude	
6	Upper right latitude(*1)	Upper right latitude	
7	Upper right longitude(*2)	Upper right longitude	
8	Lower Left latitude(*1)	Lower left latitude	
9	Lower Left longitude(*2)	Lower left longitude	
10	Lower right latitude(*1)	Lower right latitude	
11	Lower right longitude(*2)	Lower right longitude	
12	Unit	Unit of observation data	When there is not a unit, not set a value.
13	Scale	Scale factor of observation data	When there is not scale factor, set 1.
14	Intercept	Intercept of observation data	When there is not offset, set 0.
15	Copyright	Copyright holder	
16	File name	File name of source data	
17	space	space （20[hex]）	
18	LF	LF	

*1 Data range assumes it 90[deg] from -90[deg].

*2 Data range assumes it 180[deg] from -180[deg].

2) Data
   The data of a channel assigned to RGB (or Single channel) is stored as BSQ format. Size of 1 pixel is 2 bytes. A little endian (default) or a big endian exists in a byte order, but it stores to the byte order specified by a user. You can specified the byte order (a Little Endian (default) or Big Endian)

Appendix A.2　CSV File Format

　This file is created when saved by **[Save Binay Format]** of **[File]** menu. The format of the CSV file which Earth Observation Data Viewer outputs is shown in Fig. A.2-1.
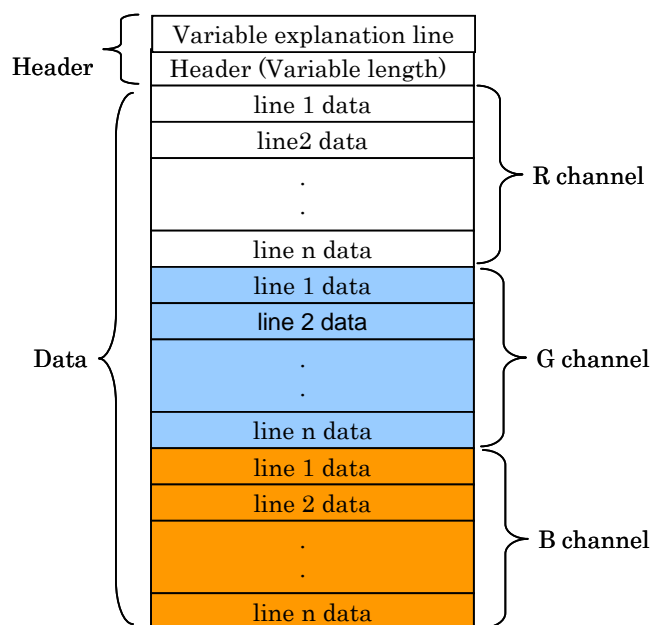
Figure A.2-1 CSV File Format

　A csv file consists of a header record and data records.
　　Header：Detailed information on observation data
　　Data　：The observation data for several channel is stored.

1) Header Format

The format of a header is shown in Table A.2-1.

Table A.2-1 Header Format (1/2)

| No.	Item	Description	Note
1	Satellite/ Sensor	Satellite name and sensor name. * AMSR-E: Aqua/AMSR-E * AMSR: ADEOS-II/AMSR * GLI: ADEOS-II/GLI * TRMM/PR: TRMM/PR * TRMM/TMI: TRMM/TMI * TRMM/VIRS: TRMM/VIRS * TRMM/Combined: TRMM	
2	Pixel	The number of pixels (observation mark).	
3	Line	The number of lines is stored.	
4	Upper Left latitude(*1)	Upper left latitude	
5	Upper Left longitude(*2)	Upper left longitude	
6	Upper right latitude(*1)	Upper right latitude	
7	Upper right longitude(*2)	Upper right longitude	
8	Lower Left latitude(*1)	Lower left latitude	
9	Lower Left longitude(*2)	Lower left longitude	
10	Lower right latitude(*1)	Lower right latitude	
11	Lower right longitude(*2)	Lower right longitude	
12	Unit	Unit of observation data	When there is not a unit, not set a value.
13	Scale	Scale factor of observation data	When there is not scale factor, set 1.
14	Intercept	Intercept of observation data	When there is not offset, set 0.
15	Copyright	copyright holder	
16	File name	File name of source data	
17	LF	LF	

*1 Data range assumes it 90[deg] from -90[deg].

*2 Data range assumes it 180[deg] from -180[deg].

*4 Delimiter for each data is a comma(,).

2) Data Formart

The storing format of the data of a channel assigned to RGB (or solid color) is shown below.

(1) The format with latitude and longitude information.

```
#Red   Channel
Lon1,lat1,data1,Lon2,lat2,data2, ········· ,LonN,latN,dataN<LF>
 :
 :
Lon1,lat1,data1,Lon2,lat2,data2, ········· ,LonN,latN,dataN<LF>
#Green   Channel
Lon1,lat1,data1,Lon2,lat2,data2, ········· ,LonN,latN,dataN<LF>
 :
 :
Lon1,lat1,data1,Lon2,lat2,data2, ········· ,LonN,latN,dataN<LF>
#Blue   Channel
Lon1,lat1,data1,Lon2,lat2,data2, ········· ,LonN,latN,dataN<LF>
 :
 :
Lon1,lat1,data1,Lon2,lat2,data2, ········· ,LonN,latN,dataN<LF>
```

(2) The format without latitude and longitude information

```
#Red    Channel
data1, data2, ········ ,dataN<LF>
 :
 :
data1, data2, ········ ,dataN<LF>
#Green   Channel
data1, data2, ········ ,dataN<LF>
 :
 :
data1, data2, ········ ,dataN<LF>
#Blue   Channel
data1, data2, ········ ,dataN<LF>
 :
 .
```

Appendix A.3　KML File Format

KML (Keyhole Markup Language) file is the file which stored the KML tag for displaying the picture file of AMSR/AMSR-E/GLI/PR/TMI/VIRS and TRMM (Combined) on GoogleEarth Client(R).

This file is created when saved by **[Save KML Format]** of **[File]** menu. The format of the KML file which Earth Observation Data Viewer outputs is shown in Fig. A.3-1.

<ex. Format>

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.0">    (1)KML Header Tag
<Document>
<name>ADEOS-II/GLI</name>  (2)Name Tag
<description> (3)Description Tag
           <![CDATA[GranuleID:A2GL10310290410OD1_OCSFR0200000000100001.01 : Copyright @ Japan Aerospace Exploration
Agency/Earth Observation Research Center]]>
</description>
<GroundOverlay> (4)Ground Overlay Tag
           <name>ADEOS-II/GLI</name>
           <visibility>1</visibility> (5)Visibility Tag
           <Icon> (6)Icon Tag
                   <href>./A2GL10310290410OD1_OCSFR0200000000100001.01.png</href>
           </Icon>
           <LatLonBox> (7)LatLonBox Tag
           <north>90</north>
           <south>-90</south>
           <east>0</east>
           <west>-360</west>
           </LatLonBox>
           <LookAt> (8)LookAt Tag
                   <heading>0</heading>
                   <latitude>0</latitude>
                   <longitude>140</longitude>
                   <tilt>0</tilt>
                   <range>18000000</range>
           </LookAt>
            <TimeSpan> (11)TimeSpan Tag
                   <begin>2003-01-01T00:00:00Z</begin>    <end>2003-02-01T00:00:00Z</end>
           </TimeSpan>
</GroundOverlay>
<ScreenOverlay> (9)ScreenOverlay Tag
           <name>Color Scale Bar</name>
           <Icon>
           <href>./A2GL10310290410OD1_OCSFR0200000000100001.01_bar.png</href>
           </Icon>
           <overlayXY x="0.5" y="0" xunits="fraction" yunits="fraction"/>
           <screenXY x="0.5" y="10" xunits="fraction" yunits="pixels"/>
           <size x="0" y="0" xunits="fraction" yunits="fraction"/>
            <TimeSpan> (11)TimeSpan Tag
                   <begin>2003-01-01T00:00:00Z</begin>    <end>2003-02-01T00:00:00Z</end>
           </TimeSpan>
</ScreenOverlay>
<LookAt> (10)LookAt Tag
           <heading>0</heading>
           <latitude>0</latitude>
           <longitude>140</longitude>
          <tilt>0</tilt>
           <range>18000000</range>
</LookAt>
</Document>
</kml>
```

Figure A.3-1 KML File Format

1) KML Tag
   KML tag is shown in Table A.3-1.

Table. A.3-1 KML Tag

No.	Tag	Description	Note
1	KML Header Tag	KML2.0 is specified.	
2	Name Tag	The label displayed on the window of GoogleEart(R) is defined. * AMSR: ADEOS-II/AMSR * AMSR-E: Aqua/AMSR-E * GLI: ADEOS-II/GLI * TRMM/PR: TRMM/PR * TRMM/TMI: TRMM/TMI * TRMM/VIRS: TRMM/VIRS * TRMM/Combined: TRMM	

3	Description Tag	The following information displayed on the window of GoogleEarth@ is defined.
		  * Granule ID
		  * Copyright
			The picture file of a color scale bar is linked.

4	Ground Overlay Tag	Attribute of overlay image is defined.	
5	Visibility Tag	A default setup is set to ON (= 1).	
6	Icon Tag	An image file name is defined.	
7	LatLonBox Tag	The latitude longitude of the four corners of an image.	

8	LookAt Tag	The following values are defined as a default viewpoint.
		  * latitude=0 (deg)
		  * longitude=140 (deg)
		  * range=18000000 (m)
		  * tilt=0 (deg)
		  * heading=0 (deg)	

9	ScreenOverlay Tag	An image of color scale is defined.	

10	LookAt Tag	The following values are defined as a default viewpoint. (Initial viewpoint)
		  * latitude=0 (deg)
		  * longitude=140 (deg)
		  * range=18000000 (m)
		  * tilt=0 (deg)
		  * heading=0 (deg)	

11	TimeSpan Tag	The period that overlay image displays is defined.	

Appendix A.4　KML File Format (The Timeline Function)

Timeline supported KML file is the file which stored the KML tag for displaying the picture file of AMSR/AMSR-E/GLI/PR/TMI/VIRS and TRMM (Combined) on Google Earth™. The Timeline function can display the images which change depending on time.

This file is created when saved by **[KML Format]** of the dialog [**Make AMSR/AMSR-E product Animation**]. The format of the time line supported KML file which Earth Observation Data Viewer outputs is shown in Fig. A.4-1.

```
<?xml version="1.0" encoding="UTF-8"?>
<kml xmlns="http://earth.google.com/kml/2.0">   (1)KML Header Tag
<Document>
<name>ADEOS-II/GLI</name>   (2)Name Tag
<description> (3)Description Tag
<![CDATA[GranuleID:A2GL10310290410OD1_OCSFR0200000000100001.01 : Copyright @ Japan Aerospace Exploration Agency/Earth
Observation Research and application Center]]>
</description>
<GroundOverlay>   (4)Ground Overlay Tag
        <name>ADEOS-II/GLI</name>
        <visibility>1</visibility> (5)Visibility Tag
        <Icon> (6)Icon Tag
            <href>./A2GL10310290410OD1_OCSFR0200000000100001.01.png</href>
        </Icon>
        <LatLonBox> (7)LatLonBox Tag
        <north>90</north>
        <south>-90</south>
        <east>0</east>
        <west>-360</west>
        </LatLonBox>
        <LookAt>   (8)LookAt Tag
            <heading>0</heading>
            <latitude>0</latitude>
            <longitude>140</longitude>
            <tilt>0</tilt>
            <range>18000000</range>
        </LookAt>
         <TimeSpan> (11)TimeSpan Tag
                <begin>2003-01-01T00:00:00Z</begin>   <end>2003-02-01T00:00:00Z</end>
        </TimeSpan>
</GroundOverlay>
<GroundOverlay> (12) Plural Ground Overlay Tags
            ...(repeat)...
    <TimeSpan>
            <begin>2003-02-01T00:00:00Z</begin><end>2003-03-01T00:00:00Z</end>
    </TimeSpan>
</GroundOverlay>
...(repeat)...
<ScreenOverlay> (9)ScreenOverlay Tag
        <name>Color Scale Bar</name>
        <Icon>
        <href>./A2GL10310290410OD1_OCSFR0200000000100001.01_bar.png</href>
        </Icon>
        <overlayXY x="0.5" y="0" xunits="fraction" yunits="fraction"/>
        <screenXY x="0.5" y="10" xunits="fraction" yunits="pixels"/>
        <size x="0" y="0" xunits="fraction" yunits="fraction"/>
         <TimeSpan> (11)TimeSpan Tag
                <begin>2003-01-01T00:00:00Z</begin>   <end>2003-02-01T00:00:00Z</end>
        </TimeSpan>
</ScreenOverlay>
<LookAt> (10)LookAt Tag
        <heading>0</heading>
        <latitude>0</latitude>
        <longitude>140</longitude>
       <tilt>0</tilt>
        <range>18000000</range>
</LookAt>
</Document>
</kml>
```

Figure A.4-1 Timeline supported KML File Format

1) KML Tag
  KML tag is shown in Table A.4-1.

Table. A.4-1 KML Tag

No.	Tag	Description	Note
11	TimeSpan Tag	The period that overlay image displays is defined.	
12	Plural Ground Overlay Tags	Two or more displayed overlay images are defined. The structure is the same as the overlay image definition having a TimeSpan Tag.	

Appendix A.5   Color Bar Table File Format

For an image window of Single Channel image, the applied Color Bar Table file for the image is shown on [**Color Bar Table**] pull down located below [**Tool Bar**]. Some typical Color Bar Table files are stored in the color table / look-up table folder. You can edit these files and save your own Color Bar Table. You can also edit it with a text editor such as WordPad or Notepad.

Table A.5-1 Color Bar Table File Format

Parameters	Format	Descriptions
Title	//character string	The default is "Earth Observation Data Viewer COLOR TABLE DEFINE"
Number of Points	N = n	n is an integer selected from 2, 3, 5 or 9.
Logarithm Interpolation	LOG_MODE = *value*	*value* is set "ON" or "OFF". If it is set as "OFF", Liner Interpolation is applied.
Inserting Color Bar mode	REVERS_MODE =*value*	*value* is set "ON" or "OFF". If it is set as "ON", the flipped color bar is inserted into an image file.
Title Name	TITLE_NAME=[*value*]	Color Bar table name
Relation between Data Value and RGB Color Value at point 1	VAL = xxxx.x [TAB] COLOR = n1, n2, n3	[TAB] means Tab key. XXXX.X is a real value. n1, n2 and n3 are Color Value of red, green and blue respectively and its value is between 0 and 255.
:	:	:
Relation between Data Value and RGB Color Value at point N	same as above	same as above N is the number of points defined in the above.

```
// Earth Observation Data Viewer COLOR TABLE DEFINE

N = 9
LOG_MODE = OFF
REVERSE_MODE = OFF
TITLE_NAME = [AMSR-E Brightness Temperature [K] ]
VAL = 154.800003   COLOR = 0, 0, 255
VAL = 176.225006   COLOR = 0, 128, 255
VAL = 197.649994   COLOR = 0, 255, 255
VAL = 219.074997   COLOR = 0, 255, 128
```

Figure A.5-1 A Sample of Color Bar Table

Appendix A.6　Look Up Table File Format

For an image window of RGB Composite image, the applied Look Up Table file for the image is shown on [**Look Up Table**] pull down located below [**Tool Bar**]. A typical Look Up Table file ("standard_stretch.lut") is stored in the "param" folder. You can edit it and save your own Look Up Table. You can also edit it with a text editor such as WordPad or Notepad.

Table A.6-1 Look Up Table File Format

Parameters	Format	Descriptions
Title	//character string	The default is " Earth Observation Data Viewer COLOR TABLE DEFINE."
Comment	// character string	The default is blank.
Number of Points	N = n	n is an integer selected from 2, 3, 5 or 9.
Logarithm Interpolation	LOG_MODE = *value*	*value* is set "ON" or "OFF". If it is set as "OFF", Liner Interpolation is applied.
Relation between Data Value and Red Color Value at point 1	VAL_R = xxxxx[TAB] COLOR_R = n1	[TAB] means Tab key. xxxx is the minimum data value with real type. n1 is an integer up to 255.
⋮	⋮	.
Relation between Data Value and RGB Color Value at point N	VAL_R = xxxxx[TAB] COLOR_R = n2	[TAB] means Tab key. xxxx is the maximum data value with real type. n2 is an integer up to 255.
Relation between Data Value and Green Color Value at point 1	VAL_G= xxxxx[TAB] COLOR_G = n3	[TAB] means Tab key. xxxx is the minimum data value with real type. n3 is an integer up to 255.
⋮	⋮	⋮
Relation between Data Value and Green Color Value at point N	VAL_G= xxxxx[TAB] COLOR_G = n4	[TAB] means Tab key. xxxx is the maximum data value with real type. n4 is an integer up to 255.
Relation between Data Value and Blue Color Value at point 1	VAL_B= xxxxx[TAB] COLOR_B = n5	[TAB] means Tab key. xxxx is the minimum data value with real type. n5 is an integer up to 255
.	.	.
Relation between Data Value and Blue Color Value at point N	VAL_B= xxxxx[TAB] COLOR_B = n6	[TAB] means Tab key. xxxx is the maximum data value with real type. n6 is an integer up to 255.

```
// Earth Observation Data Viewer COLOR TABLE DEFINE

N = 9
LOG_MODE = OFF
VAL_R = 154.800003        COLOR_R = 0
VAL_R = 176.225006        COLOR_R = 31
VAL_R = 197.649994        COLOR_R = 63
VAL_R = 219.074997        COLOR_R = 95
VAL_R = 240.500000        COLOR_R = 127
```

Figure A.6-1 the sample of Look up table

Appendix A.7　Initial Parameter File Format

Initial Parameter File (EarthObservationDataViewer.ini) is stored in the same folder where the executable binary code of Earth Observation Data Viewer and two sets of dynamic link library (hd421m.dll and hm421m.dll) are stored.

It defines the directory information of Earth Observation Data Viewer folder which is created during the installation by its installer.

Table A.7-1 Initial Parameter File Format [1/2]

Parameter	Format	Descriptions
Descriptor	**[DIR]**	**Fixed.**
Parameter Folder Name	DEF_FILE=folder_name1	The folder name for saving the Color Bar Table files and Look Up Table files.
Input AMSR Data Folder Name	INPUT_DIR=folder_name2	The folder name specified during [Open AMSR/AMSR-E Product] dialog
Output AMSR Data Folder Name	OUTPUT_DIR=folder_name3	The folder name specified in [Save As] dialog on [Display map & products Window]
Input GLI Data Folder Name	INPUT_DIR_GLI=folder_name4	The folder name specified during [Open GLI Product] dialog
Output GLI Data Folder Name	OUTPUT_DIR_GLI=folder_name5	The folder name specified in [Save As] dialog on [Display map & products Window]
Input TRMM Data Folder Name	INPUT_DIR_TRMM=folder_name6	The folder name specified during [Open TRMM Product] dialog
Output TRMM Data Folder Name	OUTPUT_DIR_TRMM= folder_name7	The folder name specified in [Save As] dialog on [Display map & products Window]
Input AMSR Data Folder Name for making animation	INPUT_DIR_MOVIE=folder_name8	The folder name specified during [Make AMSR/AMSR-E Product Animation] dialog
Output AMSR Animation File Folder Name	OUTPUT_DIR_MOVIE= folder_name9	The folder name specified in [Save As] dialog on [Make AMSR/AMSR-E Product Animation] dialog
Input GLI Data Folder Name for making animation	INPUT_DIR_MOVIE_GLI= folder_name10	The folder name specified during [Make GLI Product Animation] dialog
Output GLI Animation File Folder Name	OUTPUT_DIR_MOVIE_GLI= folder_name11	The folder name specified in [Save As] dialog on [Make GLI Product Animation] dialog
Input TRMM Data Folder Name for making animation	INPUT_DIR_MOVIE_TRMM= folder_name12	The folder name specified during [Make TRMM Product Animation] dialog
Output TRMM Animation File Folder Name	OUTPUT_DIR_MOVIE_TRMM= folder_name13	The folder name specified in [Save As] dialog on [Make TRMM Product Animation] dialog

Table A.7-2 Initial Parameter File Format [2/2]

Parameter	Format	Descriptions
Generic Descriptor	**[GENERIC]**	**Fixed.**
Number of read file	MAX_FILE=N	The maximum number of a reading file. it is defined by **[Preferences]** dialog
Endian	ENDIAN=0	Byte order for binary file. 0:BIG ENDIAN 1:LITTLE ENDIAN
Non-Observation data value.	INV_DATA_VAL=N	Non-Observation data set value.
Number of the points	N_COL=N	Number of the points output to one record to a CSV file.
Decimal place of output data	N_FRAC=N	Decimal place of output data to a CSV file.
Sampling Interval for GLI	INTERVAL = N	Saving the Sampling Interval for GLI
Sampling Interval for TRMM	INTERVAL_TRMM = N	Saving the Sampling Interval for TRMM
Color of the coast line	COLOR_SHORELINE=VALUE	Saving the color of the coast line (The value is hexadecimal numbers [ABGR])
Color of the helpline	COLOR_HELPLINE=VALUE	Saving the color of the helpline (The value is hexadecimal numbers [ABGR])
Color of the equator	COLOR_EQUATOR=VALUE	Saving the color of the equator (The value is hexadecimal numbers [ABGR])
Color of the background.	COLOR_BACK=VALUE	Saving the color of the back (The value is hexadecimal numbers [ABGR])
Flag statement of drawing the coast line	DRAW_SHORELINE=VALUE	Saving the flag statement of drawing the coast line (The value is TRUE or FALSE)
Flag statement of drawing the helpline	DRAW_HELPLINE=VALUE	Saving the flag statement of drawing the helpline (The value is TRUE or FALSE)
Flag statement of drawing the equator	DRAW_EQUATOR=VALUE	Saving the flag statement of drawing the equator (The value is TRUE or FALSE)
Flag statement of painting out the background flag.	DRAW_BACK=VALUE	Saving the flag statement of painting the background (The value is TRUE or FALSE)
Map Descriptor	**[MAP]**	**Fixed.**
Map file definition	MAP_FILE=.¥gshhs_l.b	The map file name.

```
[DIR]
DEF_FILE=C:¥Program File¥EarthObservationDataViewer
INPUT_DIR=C:¥Program File¥EarthObservationDataViewer¥Data¥AMSR
OUTPUT_DIR= C:¥Program File¥EarthObservationDataViewer¥Data¥AMSR
INPUT_DIR_GLI= C:¥Program File¥EarthObservationDataViewer¥Data¥GLI
OUTPUT_DIR_GLI= C:¥Program File¥EarthObservationDataViewer¥Data¥GLI
INPUT_DIR_TRMM= C:¥Program File¥EarthObservationDataViewer¥Data¥TRMM
OUTPUT_DIR_TRMM= C:¥Program File¥EarthObservationDataViewer¥Data¥TRMM
INPUT_DIR_MOVIE=C:¥Program File¥EarthObservationDataViewer¥Data¥AMSR
OUTPUT_DIR_MOVIE= C:¥Program File¥EarthObservationDataViewer¥Data¥AMSR
INPUT_DIR_MOVIE_GLI= C:¥Program File¥EarthObservationDataViewer¥Data¥GLI
OUTPUT_DIR_MOVIE_GLI= C:¥Program File¥EarthObservationDataViewer¥Data¥GLI
INPUT_DIR_MOVIE_TRMM= C:¥Program File¥EarthObservationDataViewer¥Data¥TRMM
OUTPUT_DIR_MOVIE_TRMM= C:¥Program File¥EarthObservationDataViewer¥Data¥TRMM


[GENERIC]
MAX_FILE=14
ENDIAN=0
INV_DATA_VAL=-9999
N_COL=2
N_FRAC=3
INTERVAL=1
INTERVAL_TRMM=1
COLOR_SHORELINE=00ffffff
COLOR_HELPLINE=00969696
COLOR_EQUATOR=000000ff
COLOR_BACK=00aa1111
DRAW_SHORELINE=TRUE
DRAW_HELPLINE=TRUE
DRAW_EQUATOR=TRUE
DRAW_BACK=FALSE

[MAP]
MAP_FILE=C:¥Program File¥EarthObservationDataViewer¥Map¥gshhs_l.b
```

Figure A.7-1 the Sample of initial parameter

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